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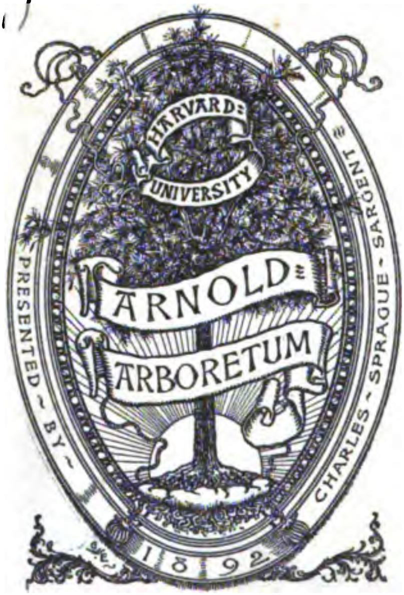
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1892

Ausl. p. 12,225

THE

JOURNAL OF BOTANY,

BEING A SECOND SERIES OF THE

BOTANICAL MISCELLANY;

CONTAINING

FIGURES AND DESCRIPTIONS

OF

SUCH PLANTS AS RECOMMEND THEMSELVES BY THEIR NOVELTY, RARITY,
OR HISTORY, OR BY THE USES TO WHICH THEY ARE APPLIED

IN THE

ARTS, IN MEDICINE, AND IN DOMESTIC ŒCONOMY;

TOGETHER WITH OCCASIONAL

BOTANICAL NOTICES AND INFORMATION.

BY

WILLIAM JACKSON HOOKER, LL.D., F.R.A. & L.S.
AND REGIUS PROFESSOR OF BOTANY IN THE UNIVERSITY OF GLASGOW.

VOL. I.

LONDON:
LONGMAN, REES, ORME, BROWN, GREEN & LONGMAN;
BLACK, YOUNG & YOUNG, FOREIGN BOOKSELLERS,
AND A. & C. BLACK, EDINBURGH.
MDCCCXXXIV.

GLASGOW:
EDWARD KHULL, PRINTER TO THE UNIVERSITY.

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[TAB. CXIII.]

REMARKS ON THE GENUS FLOERKEA OF WILLDENOW.

BY JOHN LINDLEY, ESQ.,
Professor of Botany in the London University.

THE genus FLOERKEA, established by Willdenow in 1801, and adopted by all succeeding systematic botanists, except Pursh, who reduced it to *Nectris*, is one of which our knowledge has hitherto been extremely imperfect. Referred to *Junceæ* by St. Hilaire, to *Hydrocharideæ* by Reichenbach, to the vicinity of *Portulaceæ* by Nuttall in his Genera of North American Plants, afterwards, by the same author, to the neighbourhood of *Cruciferæ*, and finally altogether omitted by Bartling, it has remained a kind of botanical puzzle, which no one has been able to explain. Having been recently favoured by Dr. Torrey with very complete specimens, both in flower and fruit, I find the structure so much at variance with that which is usually assigned to it, as to deserve to be made generally known. To criticise the characters by which it has been hitherto defined, would be only to enumerate a series of misconceptions or omissions that have arisen from the minuteness and delicacy of its parts. A more agreeable task will be to describe the fructification, as I have found it myself.

FLOERKEA.

ALABASTRI *calyx* herbaceus, monophyllus, trifidus, æstivatione valvata; laciniis erectis, intus striis acicularibus notatis; *petala* tria, minuta, membranacea, disco carnoso perigyno inserta, uninervia; *stamina* 6, in eadem disco inserta, 3 sepalis opposita petalis æqualia, 3 petalis opposita multo breviora; *filamenta* subulata, flava; *antheræ* subrotundæ, biloculares, longitudinaliter dehiscentes; *ovarium* superum, trilobum, lobis calycis laciniis oppositis; *stylus* filiformis, lobis ovarii vix longior; *stigma* trifidum; *ovula* solitaria, ascendentia.

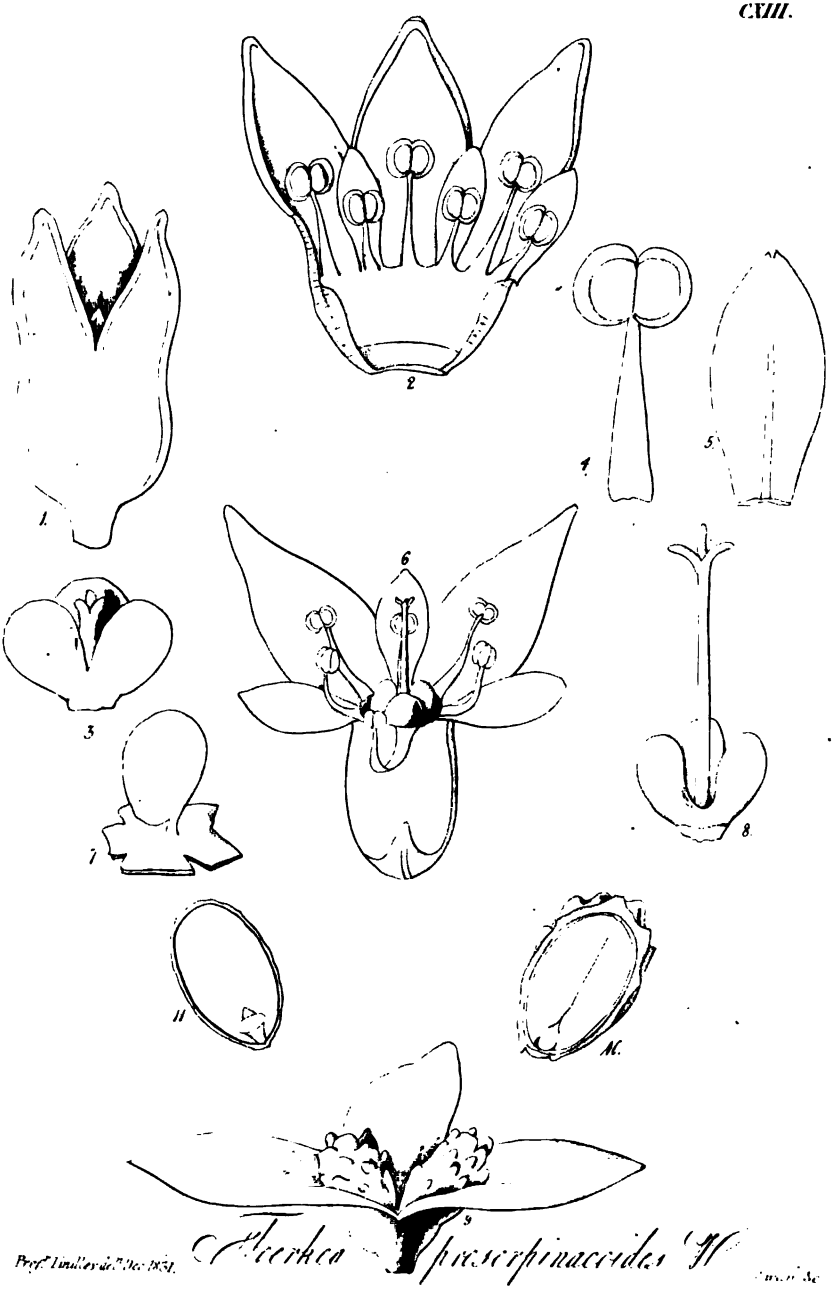
FLORIS EXPANSI *calyx* 3-partitus, laciniis ovatis acuminatis;

stamina omnia subæqualia, patentia; *discus* fere obliteratus; *stylus* staminibus æqualis; cæteræ partes immutatæ.

FRUCTUS *calyx* persistens, laciniis patentissimis, paulo amplificatis; *achenia* 2–3, oblonga, tuberculata; *pericarpium* coriaceum; *semina* cavitatem totam replentia; *embryo* oblongus, exalbuminosus, *cotyledonibus* plano-convexis, *radicula* intra bases cotyledonum inclusa, hilo proxima, *plumula* conica, conspicua.

Such being the essential structure of this plant, while it is obvious that it cannot be referred to any of the Natural Orders in which it has actually been placed, or to which it has been approximated, it is equally certain that it is by no means easy to say to what it really belongs.

In habit, it possesses so few characteristic marks, that one can scarcely draw any inference from it. *Ranunculaceæ* are perhaps those, certain species of which it most resembles, and its apocarpous fruit would be in a slight degree corroborative of such an association; but the structure of the calyx, the perigynous disk, and the absence of albumen, will not permit us to place it even in their neighbourhood. It may also be compared with *Geraniaceæ* in some points, such as the deep lobes of the ovarium, with monospermous cells, and the want of albumen; but it is destitute of all tendency to a monadelphous state of the stamens, it has nothing like a gynophore with a central axis, and its seeds are altogether different, not to speak of its perigynous disk. Many other Orders might also be selected, with which points of agreement might be established. But it seems to me that *Sanguisorbeæ* are the plants among which, or in the neighbourhood of which, *Floerkea* must take its place. They agree, to a certain extent, in habit: that is, many *Sanguisorbeæ* are inconspicuous, procumbent, herbaceous plants, with divided leaves; both have definite stamens arising from a perigynous disk; if *Floerkea* has its styles united almost to the apex, *Sanguisorbeæ* have unilocular monospermous carpella, with the styles proceeding occasionally from their base, so that they only differ in an adhesion of the styles: in *Sanguisorbeæ* we have seeds always originating at the point where



Prof. Lindley del. 7 Dec. 1831. Floerkea proserpinacoides W. [illegible] Sc.

the style quits the ovarium, and an exalbuminous embryo with plano-convex cotyledons, all which equally exist in *Floerkea*. On the other hand, if we inquire into the differences that exist between this plant and the Order to which I have suggested that it may be referred, we find that they consist, firstly, in the absence of stipules; secondly, in the presence of petals; thirdly, in the tube of the calyx not becoming indurated; and, finally, in those stamens, which are opposite the sepals, being the most developed—the reverse of what occurs in *Sanguisorbeæ*. But in *Rosaceæ*, of which many would have the latter to be a part, although an Order in which stipules are usually highly developed, they are absent in *Spiræa*, &c.; the presence of petals in the rudimentary state in which they exist in *Floerkea*, would rather confirm its affinity with an apetalous Order, than its relation to one in which the petals are habitually perfect: just as in *Amaranthaceæ*, *Illecebreæ*, *Euphorbiaceæ*, and the like, where similar appearances occur; the want of induration in the tube of the calyx is probably due to the absorption of the disk, in this genus, at a very early period, and may be regarded as a specific character rather than as one affecting its ordinal position; and, finally, the presence of petals may be supposed to explain the cause of those stamens, which are alternate with the sepals, being the least, instead of the most, developed, as is usual in apetalous *Sanguisorbeæ*.

Tab. CXIII. *Fig.* 1, A flower-bud. *Fig.* 2, The same, cut open, showing the structure at this period before the disk is absorbed. *Fig.* 3, The pistillum of the same. *Fig.* 4, A stamen. *Fig.* 5, A petal. *Fig.* 6, An expanded flower. *Fig.* 7, An ovulum, with a lacerated portion of the pericarpium adhering to it. *Fig.* 8, The pistillum of the expanded flower. *Fig.* 9, The calyx, in fruit. *Fig.* 10, A section of the achenium, at right angles with the cotyledons. *Fig.* 11, A section of the seed, parallel with the cotyledons:—all highly *magnified*.

CATALOGUE OF THE ORCHIDEÆ IN MR. CUMING'S COLLECTION OF SOUTH AMERICAN PLANTS.

BY PROFESSOR LINDLEY.

ASARCA. *Lindl. in Quart. Journ. March*, 1827, *p.* 20.

674* A. *aurantiaca*, (Lindl. MSS.); caule vaginis membranaceis vestito, labello trilobo venis varicosis.—Valparaiso.

This differs from *A. speciosa* in its stem not being leafy, in its flowers being much smaller, and in the form and surface of its labellum.

CHLORÆA. *Lindl. l. c. p.* 47.

678 (bis). C. *multiflora.* Lindl. l. c.—Valparaiso.

141. C. *virescens. Id.*—Conception.

681. C. *alaris. Id.*—Valparaiso.

677. C. *disoides. Id.*—Valparaiso.

676. C. *bletioides. Id.*—Valparaiso.

679. C. *volucris*, (Lindl. MSS.); foliis ...., bracteis floribus parum brevioribus, sepalis lateralibus ovatis apice obtusis concavis, petalis obovatis venis tuberculatis, labello unguiculato cordato acuminato convexo utrinque bicristato: disco appendicibus filiformibus creberrimis barbato.—Valparaiso.

680. C. *cristata*, (Lindl. MSS.); foliis ...., bracteis floribus multo brevioribus, sepalis lateralibus lineari-oblongis apice concavis margine undulatis, petalis oblongis acutis lævibus, labello subrhomboideo; lobis lateralibus rotundatis verrucosis sensim in intermedium lacerum apice erosum desinentibus; axi cristata.—Valparaiso.

673. C. *affinis*, (Lindl. MSS.); foliis oblongis erectis obtusis, bracteis ovario vix longioribus, sepalis lateralibus oblongis

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* The Numbers refer to those which are distributed with the specimens to the purchasers of Mr. Cuming's plants, of which a more particular account is given in the 3d volume of the First Series of the Botanical Miscellany, p. 129. Professor Lindley has kindly undertaken to name and characterize the Orchideous plants, and I lose no time in laying this valuable communication before the public.—*W. J. H.*

apice obtusissimis obliquis crenatis, petalis ovato-lanceolatis obtusis basi hinc varicoso-venosis, labelli ungue lato concavo: limbo subrotundo oblongo 3-lobo; lobis lateralibus integerrimis intermedio rotundato dentato, venis omnibus dimidio inferiore calloso-cristatis superiore tuberculatis.—Valparaiso.

682. C. *barbata*, (Lindl. MSS.); foliis ...., caule subtrifloro, bracteis acuminatis floribus paulo brevioribus, sepalis lateralibus lineari-lanceolatis obtusis, petalis oblongo-linearibus obliquis margine anteriore venisque papillosis, labello ovato indiviso: marginibus laceris, per faciem totam appendicibus creberrimis cristato basi unguiculato tuberculato.—Valparaiso.

BIPINNULA. *Juss.*

678. B. *mystacina*, (Lindl. MSS.); sepális lateralibus apice multifidis dilatatis, labello crenato tuberculato, caule multifloro.—Valparaiso.

HABENARIA. *Willd.*

1050. H. *maxillaris*, (Lindl. MSS.); foliis lanceolatis acuminatis, sepalis ovatis obtusis æqualibus, petalis bipartitis: lobo antico subulato postico lineari-lanceolato, labello tripartito: laciniis æqualibus: lateralibus filiformibus intermedio latiore, stigmatis processubus latis rectis falcatis maxillæformibus.—Lima et Peruvia. Sept.

FERNANDEZIA. *Fl. Peruv.*

1298. F. *elegans*, Loddiges.—Panama et Columbia occidentalis.

DICHÆA. *Lindl. MSS.*

Perianthium connivens. *Sepala* et *petala* libera, acuta, equalia. *Labellum* unguiculatum, ecalcaratum, deltoideum, cum columna articulatum. *Columna* erecta, teres, aptera. *Anthera* bilocularis. *Pollinia* 4, geminata, collateralia (00 00), caudicula cuneata, glandula minuta.—Epiphytæ *caulescentes, repentes.* Folia *parva, disticha.* Flores *solitarii, axillares, minuti.*—*Hujus generis sunt* Cymbidia graminifolium, echinocarpum, trichocarpon, muricatum, *cet.; necnon* Fernandeziæ *quædam Floræ Peruvianæ.*

1292. D. *Panamensis*, (Lindl. MSS.); foliis glaucis linearibus acutis rectis, pedunculis capillaribus, labello ovato subsagittato, fructu glabro.—Panama et Columbia occidentalis.

ASPASIA. *Lindl. MSS.*

Perianthium patens, æquale. *Sepala* lateralia libera; supremum cum petalis basi connatum. *Labellum* oblongum, concavum, ecalcaratum, obsolete 4-lobum, cum columna semiconnatum. *Columna* labello parallela, semiteres, emarginata. *Anthera* .... *Pollinia* 2, pyriformia, postice sulcata, caudicula plana cuneata, glandula parva.—Epiphyta *caulescens, pseudo-bulbosa.* Folia *subcoriacea.* Spicæ *radicales, breves.* Flores *mediocres.—Genus* Ornithidio *proximum, perianthio patente, sepalo supremo columna connato, labello, polliniisque solidis nec bipartibilibus diversum.*

1297. A. *epidendroides*, (Lindl. MSS.)—Panama et Columbia occidentalis.—Folia lanceolata, v. lineari-lanceolata, basi angustata, 8 uncias ad pedem longa. Pseudobulbi oblongi, ancipites, axillares.

EPIDENDRUM. *L.*

1250. E. *asperum*, (Lindl. MSS.); foliis ...., panicula ramosa multiflora, sepalo supremo subspathulato lateralibus lineari-oblongis acutis, petalis unguiculatis spathulatis, labello subrotundo margine crispato disco venis elevatis cristato, ramulis ovariisq. verrucosis.—Panama et Columbia occidentalis.—E. *fruticoso* affine.

1298. E. *auropurpureum*, (Lindl. gen. et sp. orch. 99.)—Panama et Columbia occidentalis.

1288. E. *musciferum*, (Lindl. MSS.); foliis distichis oblongis planis, sepalis oblongo-lanceolatis, petalis linearibus, labelli trilobi cordati lobis lateralibus rotundatis intermedio leviter emarginato: disco ecalloso, spica globosa recurva, bracteis minutis, pedicellis capillaribus.—Panama et Columbia occidentalis.—E. *fuscato* simile. Differt tamen floribus minoribus longius pedicellatis, bracteis minutissimis, foliis planis nec undulatis, denique callo nullo in labellum.

ONCIDIUM. *Swartz.*

1247. O. *altissimum*, Sw.—Panama et Columbia occidentalis.

1208. O. *onustum*, (Lindl. MSS.); sepalis omnibus liberis, labello bilobo transverso: lobis lateralibus linearibus apice subdilatatis, callo baseos oblongo cochleato antice appendicula tuberculiformi instructo, alis columnæ 2 integerrimis, foliis linearibus complicatis falcatis, scapo simplici, racemis cernuis secundis multifloris.—Panama et Columbia occidentalis.

1312. O. *ampliatum*, (Lindl. MSS.); sepalis omnibus liberis, labello bilobo subrotundo transverso: lobis lateralibus brevissimis, callo baseos 3-lobo: lobis lateralibus teretibus intermedio compresso, alis columnæ 3 cuneatis dentatis lateralibus reflexis, pseudobulbis subrotundis compressis, foliis planis oblongo-lanceolatis, scapo erecto apice ramoso.—Panama et Columbia occidentalis.

HEXISEA. *Lindl. MSS.*

1297. *Perianthium* clausum, *sepala* et *petala* subæqualia, angusta; illorum lateralibus invicem discretis sed basi columnæ adnatis. *Labellum* posticum, cum columnæ connatum, refractum, inappendiculatum, integerrimum, sepalis subconforme. *Columna* erecta, basi nullo modo producta, apice biaurita. *Anthera* dorso convexa, carnosa, 4-locularis, valvulis membranaceis longitudinaliter dehiscentibus. *Pollinia* 4, collateralia (00 00);[*] materie parca, granulosa, stigmati annexa.—Herba *epiphyta, caulibus teretibus, adscendentibus, articulatis.* Folia *linearia, coriacea, apice emarginata.* Racemi *terminales, pauciflori, bracteis magnis membranaceis, e squamis cartilagineis imbricatis erumpentes.*

This genus is, in some respects, related to *Isochilus* and *Dinema*, from which, however, it differs entirely in the structure of its pollen-masses. Its nearest affinity is certainly with *Cœlogyne*,[*] and particularly with the section *Panisea*, from

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[*] I avail myself of this opportunity for correcting an error in the generic character of *Cœlogyne* in the "Gen. and Sp. of Orchideous Plants."

which it is chiefly distinguished by its posterior labellum connate with the column, like that of an *Epidendrum*. I am uncertain if this genus is not the same as *Elleanthos* of Presl.

1. Hexisea *bidentata*.—HAB. in Panama et Columbia occidentali, *Cuming*. (*hab. s. sp.*)

Caules teretes, 6-8-poll. longi. *Folia* 4 poll. longa, 2½ lin. lata. *Flores* glaberrimi, *Ornithidio coccinei* fere magnitudine. *Sepala* et *petala* lineari-lanceolata, acuta. *Labellum* subconforme, sed apicem versus paulo dilatatum. *Auriculæ* columnæ bidentatæ.

In this plant, the petals are often deformed, so as to be either abbreviated, or truncated, or falcate, or toothed. Their natural form is, no doubt, such as I have described.

NOTES UPON A SMALL COLLECTION OF PERUVIAN ORCHIDEÆ. BY PROFESSOR LINDLEY.

No better example of the inexhaustible riches of Peruvian Orchideous plants need be adduced than the following, where, among fifteen species, two only have before been described; and while one is a genus totally different from any previously known, another is perhaps scarcely referable to the genus (*Oncidium*) with which it is associated. They will all be hereafter incorporated with Messrs. Hooker and Arnott's valuable Catalogue of South American Plants; but as some time must elapse before the Monocotyledones can be therein inserted, the characters and memoranda have been prepared, with a view of encouraging others who may visit such localities, to perseverance in the collection of this interesting tribe.

By a strange inadvertence the pollen-masses are stated to be incumbent ($\begin{smallmatrix}0\\0\end{smallmatrix}$ $\begin{smallmatrix}0\\0\end{smallmatrix}$), instead of collateral (00 00). They are rightly described in the "Analytical Table."

1. Pleurothallis *cordata. Lindl. Gen. and Sp. Orch. p.* 5.—Turuencho, near Cuença, *Prof. Wm. Jameson*, Dec. 1831.

The only specimen is, like that in Mr. Lambert's herbarium from Pavon, destitute of flowers; it is also rather smaller.

2. Pleurothallis *caulescens;* caulibus ascendentibus foliosis gracillimis, foliis membranaceis patentibus vaginantibus lineari-lanceolatis vix costatis, racemis 2–3 terminalibus erectis subsecundis caulium longitudine, bracteis ochreatis ovatis acutis, sepalis lanceolatis lateralibus subconnatis; petalis ovatis acutis duplo brevioribus, labello postico unguiculato ovato obtuso obsolete trilobo complicato.—Sent from near Cuença by *Professor Wm. Jameson.*

This is the only species of *Pleurothallis* yet discovered in which the stem bears more than a single leaf. In this, the early formed leaves, which are usually very little developed, and which remain upon the stem in the form of sheathing scales, acquire a lamina, while the terminal leaf, no longer supplied with superabundance of food, does not arrive at a size disproportionately great to those that were first developed. The leaves are from half an inch to an inch in length, and exceedingly narrow. The flowers are pale yellow and whole-coloured.

3. Pleurothallis *macrorhiza;* foliis lineari-oblongis acutis carnosis basi valde angustatis cum petiolo articulatis, pedunculo bi-trifloro erecto capillari foliis subæquali v. longiore basi cum petiolo laxe vaginato, sepalis ovato-oblongis: lateralibus fere ad apicem connatis; petalis cuneatis, labello ovato obtuso basi cucullato petalis duplo longiore.—Near Cuença, *Professor Wm. Jameson.*

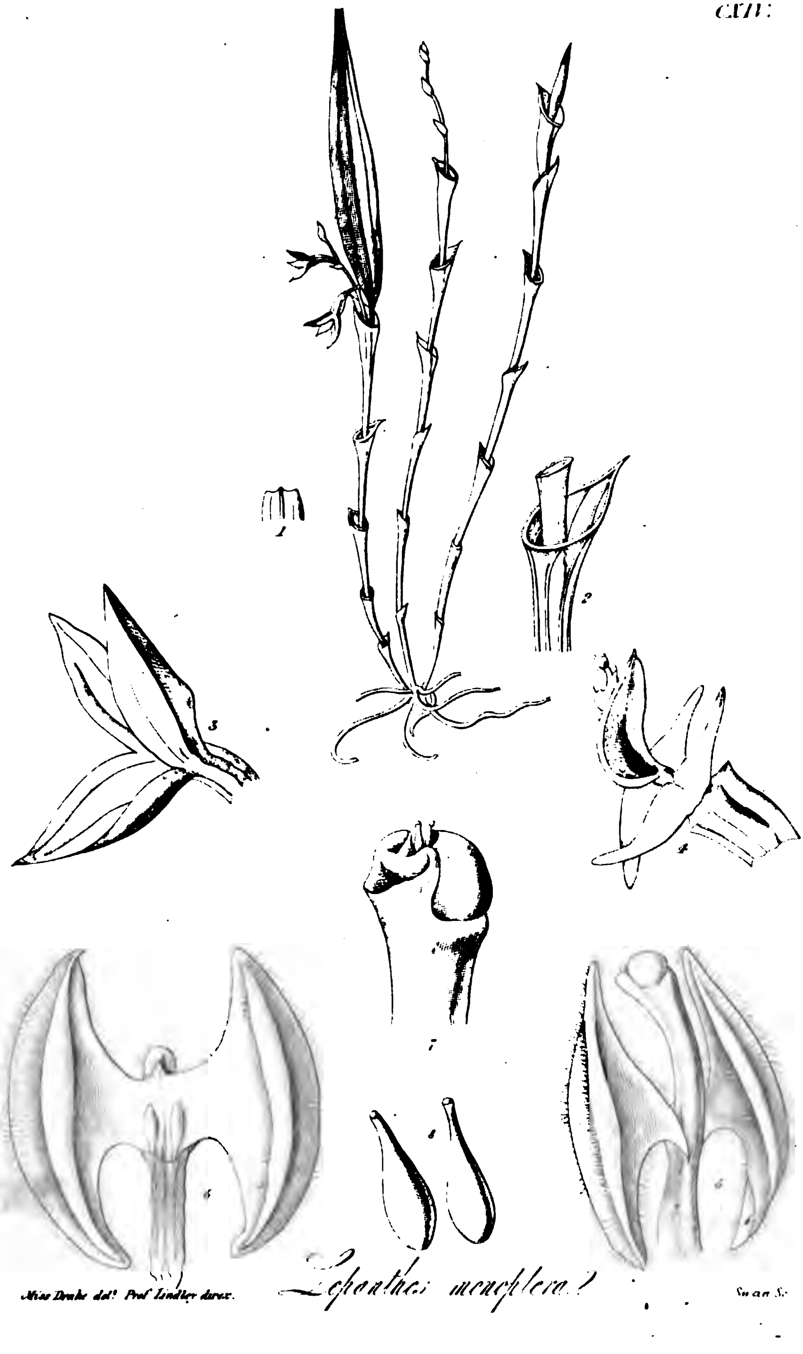
This is a species remarkable for the great length and thickness of its roots in proportion to its stem and leaves; they creep over the surface of bark among mosses, and extend to the distance of four or five inches on all sides; so that a plant, not more than two inches high, is provided with the means of procuring its nutriment from a circle two feet and a half in circumference. If trees occupied ground in the same proportion, we should have no forests, for a tree only sixty feet high would require a circle of 300 yards in circumference; while the *Pines* of North America, which attain the height of 200 feet, would singly occupy about a dozen acres.

The flowers are apparently pale yellow, and very large for the genus. I have not been able to examine the exact structure of either labellum or column. The stems are very short, and covered with loose sheaths, the uppermost of which enwraps the base of the peduncle, and with it the lower part of a rather long petiole, with which the leaf is very distinctly articulated.

4. Lepanthes *monoptera;* vaginis margine apicis levissime pubescentibus, folio lanceolato apice obsolete tridentato pedunculo subsolitario bifloro triplo longiore, petalis lunatis, labelli laciniis securiformibus carinatis pilosis, ovarii angulati costa dorsali membranaceo-alata. (TAB. CXIV.)—Near Cuença, *Professor Wm. Jameson.*

Caules erecti, filiformes, 2–3-poll. longi, glabri, vaginis instructi membranaceis, infundibularibus, ore marginatis, cuspidatis, levissime pubescentibus, supremis majoribus. *Folium* solitarium, lanceolatum, coriaceum, apice præmorsum, obsolete tridentatum, 2-poll. long., 3–4 lin. latum. *Pedunculus* subsolitarius, folio 3-plo brevior, capillaris, 3-florus. *Bracteæ* minutæ, vaginis conformes. *Flores* nutantes, verosimiliter violacei. *Ovarium* angulatum, costis sepalinis alatis, postica latissime. *Sepala* ovato-lanceolata, acuta, circiter 1¾ lineam longa, lateralia basi connata. *Petala* brevissima, glabra, e basi angusta in laminam latam truncatam (ergo utrinque quasi cornutam) lunatam, dilatatam, angulis (v. si mavis cornubus) circa dorsum et faciem columnæ incurvis: *labellum* sepalis plusquam dimidio brevius, bipartitum, cum columna usque ad ⅓ ejus altitudinis connatum, in axi callis duobus clavatis parallelis instructum; laciniis ad utrumque latus columnæ adstantibus et alas omnino referentibus, securiformibus, pilosis, carinatis, margine inflexis; carinis longe extra medium lacinias valde obliquas reddentibus; inter lacinias adest apiculus parvus carnosus pubescens. *Columna* elongata, cylindracea, clavata;

CXIV.



Miss Drake del! Prof Lindley direx. *Lepanthes monoptera?* Swan Sc.

stigmate obliquo ad apicem, clinandrio immarginato ad dorsum stigmatis; rostello parvo obtuso. *Anthera* membranacea, semibilocularis, ecristata. *Pollinia* duo, pyriformia, apicibus subdiaphanis, verosimiliter viscidis.

Of this I have only examined one specimen, and a single expanded flower; from which, however, it has been possible to determine the precise structure of this very singular genus, and which completely confirms the opinion hazarded in the *Genera and Species of Orchideous Plants*, as to the nature of the errors committed by Swartz in his descriptions of the only species at that time known. This is nearly related to *Lepanthes tridentata*.

TAB. CXIV. Lepanthes monoptera. *Fig.* 1, Apex of a leaf. *Fig.* 2, A vagina of the stem. *Fig.* 3, Side-view of an expanded flower. *Fig.* 4, Side-view of the petals, labellum, and column. *Fig.* 5, Half back-view of the column, with the two lobes of the labellum *in situ*. *Fig.* 6, Inside of the labellum, which has been torn from the column. *Fig.* 7, Apex of column, with stigma, anther, and pollen-masses in their natural position. *Fig.* 8, Pollen-masses.—*Fig.* 3 is magnified about ten times, and *fig.* 4 about sixty times; the others in proportion.

5. Stelis *Jamesoni;* foliis oblongis carnosis basi valde angustatis subtus minute tuberculatis pedunculis solitariis erectis 4–8-floris triplo brevioribus, racemo flexuoso, bracteis ochreatis acuminatis, floribus cernuis, sepalis ovatis obtusis æqualibus, petalis labelloq. emarginato subrotundis concavis.—Cuença, *Professor William Jameson.*

6. Stelis *concinna;* foliis ovato-subrotundis marginatis in petiolum abrupte angustatis pedunculis capillaribus flexuosis 4–7-floris duplo brevioribus, bracteis minimis infundibularibus, limbo obliquo acuto subcordato, sepalis subrotundis concavis æqualibus aveniis, petalis labelloque subrotundis.—In the wood of Peragua, on the bark of trees growing among mosses, *Colonel Hall.*

In habit, this is something like *Lepanthes cochlearifolia,* but is not half the size, and wants the ciliated vaginæ of that species. The leaves are not more than half an inch long, and the length of the tallest racemes does not much exceed an inch and a half; they are often much shorter. This is the smallest species, except *S. pusilla*.

7. Stelis *Hallii;* foliis lineari-oblongis obtusis basi valde angustatis racemis filiformibus multifloris duplo brevioribus, bracteis infundibularibus, limbo obliquo acuto subcordato, sepalis ovatis acutis concavis, postico complete trivenio duplo majore, sepalis subrotundo-ovatis labelloque cuneato truncato carnosissimis.—Trunks of trees at Turuencho near Cuença, *Colonel Hall.*

8. DIOTHONEA.*

Sepala conniventia, distincta; lateralibus paulo longioribus. *Petala* sepalo supremo concavo conformia et subæqualis. *Labellum* cum cyatho e lateribus dilatatis membranaceis columnæ formato articulatum, obsolete lobatum, basi bilamellatum, sepalis lateralibus multo longius, dependens. *Columna* erecta, clinandrio cucullato antheram obsolete 4-locularem semitegente. *Pollinia* 4, solida, pyriformia, apice materie pulverea cohærentia.—Herba *epiphyta, ramosa, ebulbis.* Racemi *axillares, multiflori, foliorum longitudine.* Flores *majusculi.*

D. *Lloensis.*—Valley of Lloa, western declivity of the Andes, *Colonel Hall.*

Caulis ramosus, compressus, vaginis persistentibus foliorum squamatus, pedalis v. ultra. *Folia* lineari-lanceolata, striata, margine revoluta, apice paululum obliqua, et subcartilaginea. *Racemi* 2 poll. longi, 9-flori. *Bracteæ* subulatæ, scariosæ, reflexæ. *Flores* membranacei, verosimiliter flavescentes. *Labellum* subrotundum, concavum, obsolete 4-lobum.

This distinct genus is remarkable for a wide, compressed cup, formed by the dilated cuneate margins of the column, with which the labellum is articulated. Its principal affinity is with *Epidendrum*, from which it is farther distinguished by its four pyriform pollen-masses and hooded clinandrium. The exact nature of the powdery matter, that terminates the pollen-masses, I have not ascertained; it most probably indicates the presence of the replicate straps that characterize *Epidendreæ.*

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* From *οδονη, a sail,* in allusion to the two membranes stretched from the column to the lip, like jibs from the foremast to the bowsprit of a ship.

9. Brassavola *nodosa. Gen. et Sp. Orch. p.* 114.—Near Cuença, *Colonel Hall.*

10. Maxillaria *platypetala. Fl. Peruv. Syst. p.* 221.—Camino Real, on banks, at the elevation of almost 6000 feet, upon the western declivity of the Andes, *Colonel Hall.*

11. Oncidium* *serpens;* caule repente tortuoso filiformi ad nodos radicante pseudobulbifero, foliis oblongo-lanceolatis acutis pedunculis bifloris brevioribus, sepalis petalisq. obovatis obtusis planis æqualibus, labello oblongo obtuso, medio constricto basi bilamellato, columna marginata apice membranacea cucullata. *Gen. et Sp. Orch. part.* 3 *ined.*—Patacocha, on the road to Esmeraldas, at the height of 6000 feet, on trunks of trees; flowers yellow, spotted with dark brown, *Col. Hall.*

12. Oncidium *nubigenum;* pseudobulbis 1–2-phyllis, foliis lanceolatis acutis, scapo simplici paucifloro (3–10), sepalis lateralibus rectis semiconnatis petalisq. oblongis acutis un-

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* Another species was accidentally mixed up with the Peruvian Orchideæ, and, therefore, we insert it from Mr. Lindley's *MSS.* in a note.

Oncidium *viperinum;* foliis lineari-lanceolatis acutis planis, scapo simplici cernuo flexuoso racemoso dense multifloro, sepalis lateralibus basi connatis divaricatis petalisq. latioribus lanceolatis undulatis recurvis acutis, labelli lobis lateralibus obsoletis denticulatis semisagittatis intermedio subrotundo-reniformi plano subbilobo, crista medio tuberculata basi et apice bicorni, columnæ alis parvis rotundatis. *Gen. et Sp. Orch. part.* 3, *ined.*—Only found on the bark of very old trees, and requires more nourishment than any of the other species: Paraguay, *Mr. Tweedie.* Near *O. bifolium.*

dulatis, labelli lobis lateralibus nullis, intermedio subrotundo subsexlobo, crista trituberculata compressa, columnæ alis rotundatis carnosis. *Gen. et Sp. Orch. part* 3, *ined.*

Found August 2, 1831, on the ridge of Asuay, growing upon the trunks of decayed trees; most commonly a single leaf springs from the bulb, but occasionally two. The scape bears from 3 to 10 flowers, of a pale purple colour. "Of all the *Orchideæ* I have seen, this species is, perhaps, the one that occurs at the highest elevation, rarely descending below 14,000 feet," *Professor William Jameson.*

13. Cyrtochilum *pardinum;* foliis lineari-oblongis basi angustatis striatis, petalis undulatis sepalisq. angustioribus lanceolatis, labello unguiculato ovato-lanceolato: unguis axi cum columna connato utrinque lamellato, callis quibusdam elevatis inæqualibus linearibus productioribus in medio.

In a wood between Cumbe and Jima, on the road to Loxa, both on trees and on the ground; Nov. 1831. *Prof. W. Jameson.*

A fine species. Flowers apparently orange-coloured, the petals and labellum spotted with brown or red. Pseudo-bulbs one or two-leaved, according to *Professor Jameson.*

15. Odontoglossum *cirrhosum;* sepalis lanceolatis petalisque latioribus undulatis acuminatissimis maculatis labello longioribus, labelli lamina cordata acuminatissima, columna apice aptera bicirrhosa.—Guayaquil, Valley of Mindo, at the height of about 6000 feet, *Colonel Hall.*

Flores verosimiliter flavi, maculis quibusdam magnis et interveniis labelli purpureis.

A LIST OF THE PLANTS OBSERVED IN THE ISLAND OF MADERA, WITH DESCRIPTIONS OF SOME NEW SPECIES. By M. Frederic Holl of Dresden.*

[Those species marked with an (*) I did not find myself, but have seen them in the collection of the Rev. William T. Lowe, an English botanist, who has resided in Madera for a year and a half. The arrangement of the species is that of Reichenbach, in his *Clavis Herbariorum*.]

Fungi. Uredo *Helioscopiæ*, DC. U. (Ustilago) *trichophora β. Penniseti*, Kunz. U. (Ustilago) *Digitariæ*, Kunz. Erineum (Gramaria) *sepultum*, Kunz. Chloridium? *atrum*, Kunz. Bryocladium *maculans*, Kunz. Peziza (Patellea) *gregaria*, Kunz. Thelephora (Apus) *bella*, Kunz. Hydnum (Apus) *Barbirussa*, Kunz. Exidia *auricula Judæ*, Fr. Boletus *citrinus*, Pers. Phacidium *Delta*, Kunz. Hysterium *adianti*, Kunz.—Algæ. Cystoseira *abrotanifolia*, Ag. *β. patens*. Sphærococcus *spinellus*, Ag. Liagora *distenta*, Lamour. Ulva *dichotoma*, Huds., *β. intricata*, Ag. Scytosiphon *Filum*, Ag. e. *fistula*. Zonaria *Pavonia*, Drap. Cladostephus *clavæformis*, Ag. Valonia *utricularis*, Ag. Scytonema *panniforme*, Ag. Linkia *pruniformis*, Roth.—Lichenes. Sticta *damæcornis*, Ach. Parmelia *caperata*, Ach. P. *saxatilis*, Ach. P. *plumbea*, Ach. P. *olivacea*, Ach. P. *parietina*, Ach. Lecidea *atrovirens*, Ach. Borrera *leucomela*, Ach. Roccella *fuciformis*, *β. linearis*. Ach. R. *tinctoria*, Ach. Alectoria *Canariensis*, Ach. Usnea *Jamaicensis*, Ach. U. *florida*. Dufourea *cuneiformis*, Kunz. Stereocaulon *paschale*, Ach. Sphærophoron *coralloides*, Ach.—Hepaticæ. Marchantia *polymorpha*, Linn. Rebouillia *Maderensis*, Raddi. Targionia *hypophylla*, Linn. Lunularia *vulgaris*, Mich. Anthoceros *crispus*, Sw. Jungermannia *Blasia*, Hook. J. *Teneriffæ*, Web. J. *serpyllifolia*, Dicks. J. *lævigata*, Schrad. J. *spinulosa*, Dicks. J. *tamariscifolia*, Linn. J. *flava*, Sw. (?) J. *repanda*, Schw. J. *resupinata*, Linn. J.

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* From the *Botanische Zeitung*, 1830, *v.* 1. *p.* 369.

complanata, Linn.—Musci. Anictangium *Lapponicum*, Hedw. Hymenostomum *contortum*, Kunz. Diphyscium *foliosum*, Mohr. Pterogonium *Smithii*, Schw. Macromitrion *nigrescens*, Kunz. Dicranum *flexuosum*, Hedw. Leucodon *Morensis*, Schw. Trichostomum *polyphyllum*, Schw. Barbula *cæspitosa*, Schw. B. *rigida*, Hedw. Webera *longicollis*, Hornsch. Bartramia *rigida*, Brid. Bryum *annotinum*, Hedw. Bryum *erythrocarpum*, Brid. Funaria *hygrometrica*, Hedw. F. *Fontainesii*, Schw.—Filices. Equisetum *arvense*, Linn. Lycopodium *Selago*, Linn. L. *denticulatum*, Linn. * Ophioglossum *Lusitanicum*, Linn. Gymnogramma *Ceterach*, Spreng[1]. G. *leptophylla*, Desv[1]. G. *Totta*, Schlecht. * Notochlæna *lanuginosa*, Desv. Polypodium *vulgare*, Linn. Pteris *arguta*, Vahl. P. *aquilina*, L. Asplenium *palmatum*, Sw. A. *rotundatum*, Klfs[1]. A. *marinum*, Linn. A. *monanthemum*, Sw. A. *ebeneum*, Ait. A. *Trichomanes*, Linn. A. *Canariense*, Willd. A. *Filix fœmina*, Bernh. A. *acutum*, Bory[1]. Blechnum *boreale*, Sm. Woodwardia *radicans*, Sw. Alantodia *umbrosa*, R. Br. Aspidium *auriculatum*, Sw. A. *patens*, Sw. A. *molle*, Sw. A. *Oreopteris*, Sw. A. *filix mas*, Sw. A. *spinulosum*, Sw. A. *dilatatum*, Sw. A. *lobatum*, Sw. A. *regium*, Sw. Adiantum *reniforme*, Linn[1]. A. *Capillus*, Sw[1]. Cheilanthes *fragrans*, Sw[1]. Davallia *Canariensis*, Sw. * Dicksonia *Culcita*, L'Herit. Trichomanes *speciosum*, Willd. Hymenophyllum *Tunbridgense*, Sw.—(All the *Ferns* are from an elevation of 2000 to 3000 feet, except those marked (1), which are only found in the region of the Cacti.)—Potamogetoneæ. Potamogeton *natans*, Linn. P. *fluitans*, Roth.—Aroideæ. Caladium *nympheæfolium*, Vent.† Lemna *minor*, L. L. *polyrrhiza*, L.—Grammineæ. Digitaria *setigera*, Roth. D. *sanguinalis*, Pers.

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† This plant is much cultivated on account of its esculent root: in autumn the tubers are planted in rows, in a swampy soil, usually near the mountain-brooks, in order that the roots may be more sure of moisture. When the plants are three years old, the tubers are considered

Pennisetum *cenchroides*, Rich. Cynodon *Dactylon*, Rich. Setaria *tenacissima*, Schrad. Aristida *cærulescens*, Desf. Chrysurus *aureus*, P. B. Eleusine *Indica*, Lam. Andropogon *hirtus*, Linn. Sorghum *Halepense*, Pers. *β. glumis villosis.* Lagurus *ovatus*, Linn. Holcus *mollis*, Linn. Lolium *perenne*, Linn. Orthopogon *Crus galli*, Spr. Triodia *decumbens*, P. B. Avena *strigosa*, Schreb. Poa *rigida*, Linn. P. *Eragrostis*, Linn. Briza *maxima*, Linn. Bromus *mollis*, Linn. Triticum *durum*, Desf. This species only is cultivated in the Island, but by no means sufficiently for the consumption, so that flour and corn are imported from N. America, and the ports of the East Sea. They sow in January and reap in June; the stalks are cut down with the sickle, and the grain trodden out by oxen. Secale *cereale*, Linn., is but little cultivated to cut green as food for the horses. Phalaris *Canariensis*, Linn. Arundo *Donax*, Linn. Saccharum *officinarum*, L. The sugar-cane was brought to Madera from Sicily, where it would not succeed, by Prince Henry, and the manufacture of sugar was very extensively carried on until the end of the seventeenth century. At present there is only a single mill, and most of the sugar is imported by the English. As in the West Indies, they never let the plant come into flower.—CYPEROIDEÆ. Scirpus *Baeothrion*, Ehrh. Cyperus *badius*, Desf. Carex *muricata*, Linn.—IRIDEÆ. Gladiolus *Byzantinus*, Mill.—NARCISSEÆ. Amaryllis *Belladonna*, Linn. —BROMELIACEÆ. Agave *Americana*, Linn.—JUNCEÆ. Juncus *acutus*, Linn.—SARMENTACEÆ. Dioscorea *sativa*, Linn. Ruscus *androgynus*, Linn.—CORONARIÆ. Scilla *hyacinthoides*, Linn. Ornithogalum *Arabicum*, Linn. Allium *Cepa* Linn.

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good, and dug up; during this time, they always cut off the large leaves, which they make use of as food for swine; so that you never see the inflorescence, and it was only by great entreaty that a farmer permitted a single plant to stand and flower for me. The tubers are frequently of the size of a man's head, of a brownish colour inside, with the taste of a potatoe when boiled, and are called by the inhabitants "*Inhames.*" Bowdich considers this plant to be *Arum peregrinum.*

This is the favourite food of the inhabitants, and, therefore, very much cultivated; whole ship-loads are brought to the city from the little places on the Island. The bulbs are very large, and of a sweeter taste than ours. Aloe *vulgaris*, Dec. Dracæna *Draco*, Linn. This tree is said to have been formerly very plentiful; but has been exterminated on account of the excellence of its wood; I only found five trees, at various places, on the southern coast.—ORCHIDEÆ. *Orchis *longibracteata*, Bivon. I only detected one single specimen with Lowe, who once also found *Satyrium diphyllum;* but this he lost.—SCITAMINEÆ. Musa *paradisiaca*, Linn. Several of these *Plantains* are seen growing at almost every cottage, being greatly valued on account of their fruit, which is esteemed an agreeable food, as well raw as roasted. When the tree has once borne fruit, it dies down; but many shoots arise up again from the root, and, therefore, no other labour is required than to gather off the fruit, and cut down the old trees; on one stem are frequently found 60 or 80 fruits, so that a man has a sufficient burden in carrying two bunches of fruit.—PALMEÆ. Cocos *nucifera*, Linn.—TAXEÆ. Myrica *Faya*, Ait.—STROBILACEÆ. Pinus *Pinea*, Linn. Cupressus *glauca*, Lam. Both these trees were first introduced from Portugal, and only grow near the country-houses. Pinus *suffrutica*, that Bowdich is said to have seen, does not grow on the Island.—AMENTACEÆ. Salix *vitellina*, Linn. Castanea *Vesca*, Gærtn. forms beautiful woods in the interior on the north side, even to an elevation of about 3000 feet. Quercus *pedunculata*, Willd.—URTICEÆ. Urtica *urens*, Linn. Parietaria *Maderensis*, Reichb. Ficus *Carica*, Linn., the dried fruits are so small and bad, that they are imported from Portugal.—ARISTOLOCHIEÆ. Aristolochia *longa*, Linn. —LAURINEÆ. Laurus *Indica*, Linn.; particularly in the interior, up to about 3000 feet elevation. The wood, which is like mahogany, is employed in various works. It is called by the inhabitants *Vinhatico*. L. *fœtens*, Ait. L. *Canariensis*, Willd.—VALERIANEÆ. Centranthus *ruber*, Dec. Fedia *olitoria*, Vahl.—RUBIACEÆ. Phyllis *Nobla*, Linn. Sherardia *arvensis*, Linn. Galium *minutiflorum*, Brot. G. *aristatum*, Linn.—Compositæ. Carlowitzia *salicifolia*, Mœnch. Carthamus *lanatus*, M. B. Ageratum *conyzoides*, Linn. Bidens *leucantha*, Willd. Gnaphalium *luteo-album*, Linn. Antennaria *leucophylla*, Reichb.; it may be the *Gnaphalium crassifolium*, Linn.? Bowdich calls it *G. tomentosum*. Elichrysum *melaleucum*, Reichb. Phagnalon *saxatile*, Fl. Cass. Eclipta *prostrata*, Linn. Erigeron *Canadense*, Linn. Cineraria *aurita* L'Herit. Senecio *dissectus*, Linn. var. *hypoleuca*. Bellis *perennis*, Linn. Pyrethrum *grandiflorum*, W. Calendula *amplexifolia*, Reichb. Achillea *Millefolium*, Linn. Rothia *cheiranthifolia*, Roth. R. *picroides*, Reichb. Schmidtia *fruticosa*, Mœnch. S. *anethifolia*, Reichb. S. *quercifolia*, Reichb. Leontodon *Taraxacum*, Linn. Lapsana *communis*, Linn. —Cucurbitaceæ. Sechium *edule*, Sw. is trained in gardens over arbours, as beans are within; the unripe fruit is eaten boiled like vegetables and called *Chocho;* they cultivate, besides, many gourds, cucumbers, melons, and water-melons.—Campanulaceæ. Campanula *aurea*, Linn. * C. *Erinus*, Linn. Lobelia *urens*, Linn. Labiatæ. Salvia *Verbenaca*, Linn. Prunella *vulgaris*, Linn. Dracocephalum *Canariense*, Linn. Clinopodium *vulgare*, Linn. Ajuga *reptans*, Linn. * Teucrium *abutiloides*, L'Herit. T. *betonicum*, L'Herit. Lavanpula *Stoechas*, Linn. var. *Pseudo-stoechas*, Reichb. Sideritis *candicans*, Ait. Origanum *virens*, Link. Bystropogon *punctatum*, L'Herit. Mentha *aquatica*, Linn. M. *pulegioides*, Reichb. Glæchoma *hederaca*, Linn. Lamium *maculatum*, Linn. Stachys *hirta*, Linn. Betonica *officinalis*, Linn. Thymus *ericæfolius*, Roth. T. *calaminthoides*. Verbena *officinalis*, Linn. Rosmarinus *officinalis*, Linn. —Asperifoliæ. Heliotropium *Europæum*, Linn. Echium *violaceum*, Linn. E. *candicans*, Linn. Myosotis *arvensis*, Linn. Cynoglossum *pictum*, Ait. * Anchusa *paniculata*, Ait.—Convolvulaceæ. Convolvulus *arvensis*, Linn. C. *althaeifolius*, Lam. C. *edulis*, Thunb., is plentifully cultivated on account of its esculent tuberous roots, and called by the inhabitants "*Batatas dozes*," the plant very readily loses its leaves in drying.—Personatæ. Veronica *agrestis*, Linn. V.

Beccabunga, Linn. Trixago *scordifolia*, Reichb. Digitalis *purpurea*, Linn. Disandra *prostrata*, Linn. Globularia *salicina*, Linn. Linaria *lanigera*, Desf. L. *dealbata*, Link.—SOLANACEÆ. Hyoscyamus *Canariensis*, Ker. Solanum *nigrum*, Linn. S. *tuberosum*, Linn. S. *pseudocarpum*, Linn. S. *Lycopersicum*, Linn. Physalis *pubescens*. Linn.—Bowdich has described this plant under the name of *Herschelia edulis*.—Samolus *Valerandi*, Linn. Plantago *Cynops*, Linn. P. *maritima*, Linn. P. *pseudo-lusitanica*, Schrad.—ERICEÆ. Erica *arborea*, Linn. This Heath forms a stem here that is "frequently above two feet in diameter," and affords fuel to the inhabitants. It commences at an elevation of 4000 feet, and ascends to the top of Pico Ruivo, the highest point of the Island; according to Bowdich, 6164 feet high. Clethra *arborea*, Ait. A long avenue of these trees leads to the country-seat of a rich Portuguese; their stems are mostly above 1½ feet in diameter. Vaccinium *Maderensis*, Link, forms little woods at an elevation of 3500 to 4000 feet. The berries are not so large as our common bilberry, but sweeter, collected together in clusters.—ASCLEPIADEÆ. Gomphocarpus *fruticosus*, R. Br. Passiflora *cærulea*, Linn. P. *quadrangularis*, Linn.—CONTORTÆ. Jasminum *contortum*, Linn. J. *odoratissmum*.—SAPOTACEÆ. Ilex *Balearica*, Desf. * I. *Perado*, Ait.—UMBELLIFERÆ. Bupleurum *protractum*, Link. B. *coriaceum*, Ait. Ammi *majus*, Linn. Oenanthe *fistulosa*, Linn. Meum *Fœniculum*, Spr. From this plant, which in Portuguese is called *Funcho*, it is said the town of Funchal has derived its name. Apium *Petroselinum*, Linn. Imperatoria *Ostruthium*, Linn. Hedera *Helix*, Linn.—RHAMNEÆ. Condalia *coriacea*, Reichb. TEREBINTHACEÆ. Rhus *coriacea*, Linn.—PAPILIONACEÆ. Psoralea *bituminosa*, Linn. P. *dentata*, DC. Cicer *arietinum*, Linn. Melilotus *parviflora*, Desf. Trifolium *repens*, Linn. Dolichos *lignosus*, Linn. Lotus *odoratus*, Schousb. L. *glaucus*, Ait. L. *cytisoides*, Linn. Scorpiurus *subvillosa*, Linn. Ornithopus *compressus*, Linn.—CASSIEÆ. Genista *virgata*, DC. G. *Scoparia*, Linn. Ulex *Europæus*, Linn.

Adenocarpus *parvifolius*, DC. Cassia *bicapsularis*, Linn. * Cytisus *candicans*, Lam.—MIMOSEÆ. Acacia *glauca*, W.—CORNICULATÆ. Cotyledon *Umbilicus*, Linn. Sedum *divaricatum*, Ait. S. *nudum*, Ait. Sempervivum *glutinosum*, Ait. S. *tabulæforme*, Haw. S. *villosum*, Ait. * Saxifraga *Maderensis*, Don.—RIBESIACEÆ. Cactus *Opuntia*, Linn., in large quantities on the base of basalt-rocks on the south coast; the fruit is eaten raw, and a gum exudes from the old leaves, similar to the *Tragacanth*. The beautiful *Aranea fasciata*, which spins its large web between the joints, is found plentifully on this Cactus.—PORTULACEÆ. Portulaca *oleracea*, Linn. Polycarpon *tetraphyllum*, Linn. Spergula *arvensis*, Linn. Polygonum *aviculare*, Linn. P. *Persicaria*, L. Rumex *Acetosella*, Linn. R. *thyrsiflorus*, Desf.—AIZOIDEÆ. Mesembryanthemum *nodiflórum*, Linn. Chenopodium *murale*, Linn. C. *ambrosioides*, Linn. * Amaranthus *strictus*, W. Phytolacca *decandra*, Linn. Achyranthes *argentea*, Lam.—ROSACEÆ. Alchemilla *vulgaris*. Linn. Agrimonia *Eupatorium*, Linn. Rosa *Bengalensis*, Pers., is almost the only *Rose* that is cultivated in the gardens. Potentilla *anserina*, Linn. Fragaria *vesca*, Linn. Rubus *fruticosus*, Linn. Chamæmeles *coriacea*, Lindl.—ONAGRARIEÆ. Callitriche *verna*, Linn. Epilobium *obscurum*, Schreb. Circæa *Lutetiana*, Linn. Œnothera *longiflora*, Thunb. Fuchsia *coccinea*, Linn., is used for garden hedges.—LYTHREÆ. Lythrum *flexuosum*, Lag. Punica *Granatum*, Linn.—MYRTACEÆ. Myrtus *communis*, Linn. Psidium *pyriferum*, Linn. The red pulp of its yellow apple-like fruit, which is called *Guavas* by the inhabitants, is eaten raw as well as preserved with sugar.—AMYGDALEÆ: Prunus *Lusitanica*, Linn.—CRUCIFERÆ. Lepidium *Virginicum*, Linn. Teesdalia *caulescens*, Reichb. Isatis *tinctoria*, Linn. Arabis *alpina*, Linn. * Cakile *rugosa*, DC. Nasturtium *officinale*, R. Br. Hesperis *diffusa*, Banks. Sinapis *arvensis*, Linn. PAPAVERACEÆ. Chelidonium *majus*, Linn. Fumaria *capreolata*, Linn. F. *officinalis*, Linn.—VIOLACEÆ. Viola *odorata*, Linn.—RANUNCULACEÆ. Nigella *sativa*, Linn. Ranunculus *repens*, Linn.

R. *arvensis*, Linn.—RUTACEÆ. Mercurialis *annua*, Linn. Ricinus *communis*, Linn. Ruta *graveolens*, Linn. Euphorbia *mellifera*, Ait. E. *gracilis*, M. B. E. *Helioscopia*, Linn. E. *platyphyllos*, Linn. E. *exigua*, Linn.—MALVACEÆ. Malva *subhastata*, Cav. M. *rotundifolia*, Linn. Sida *rhombifolia*, Linn. S. *Abutilon*, Linn.—GERANIACEÆ. Geranium *Robertianum*, Linn. G. *anemonæfolium*, L'Herit. Erodium *malachoides*, W. E. *cicutarium*, Sm.—BOMBACEÆ. Oxalis *corniculata*, Linn., var. *fruticulosa*.—CARYOPHYLLACEÆ. Sagina *procumbens*, Linn. Dianthus *prolifer*, Linn. Arenaria *marina*, Linn. Cerastium *arvense*, Linn. Stellaria *holostea*, Linn. HYPERICINEÆ. Linum *Gallicum*, Linn. Hypericum *floribundum*, Ait. H. *glandulosum*, Ait. H. *humifusum*, Linn. H. *undulatum*, Schousb. H. *grandifolium*, Chois. H. *perforatum*, Linn. H. *quadrangulare*, Linn.

NOTES AND OBSERVATIONS ON THE ABOVE "LIST OF PLANTS,* OBSERVED IN THE ISLAND OF MADERA, WITH A DESCRIPTION OF SOME NEW SPECIES."

In a Letter to DR. HOOKER, F. R. A. & L. S. S., *Reg. Professor of Botany in the University of Glasgow, &c.*

BY THE REV. R. T. LOWE, M. A.

MY DEAR SIR,—I have to acknowledge myself much indebted to you, *inter alia*, for a transcript of my former acquaintance Mr. Höll's useful and instructive List of Madera Plants. The accurate elucidation of the natural history of these Islands, and of Madera more especially, has been, as you know, during the whole of my residence here, a principal source of interest and amusement with me; and the prolongation of my stay has afforded facilities to my researches, incomparably greater than any casual or temporary visitor can possess. Mr. Höll had not only to contend with the common disadvantages of a mere visitor, but to struggle with other peculiar and most oppressive difficulties; and I am truly gratified to find that, in the face of obstacles which few men could have surmounted, he has been able to produce a list so highly creditable to his zeal, industry, and botanical acquirements.

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* This refers to the List immediately preceding.

Such, indeed, is the general interest of his publication, that I am unwilling the little inaccuracies and mistakes it appears to me to contain, should pass unrectified. The length of my residence in Madera having afforded me opportunities which Mr. Höll could not possibly enjoy, he will, I am sure, be the last person to take umbrage at any emendations proposed in a spirit of regard and respect to his merits, and out of a mere love of truth and accuracy.

To yourself, my dear Sir, I make no apology; for I feel assured that the last-mentioned consideration, be the subject so trifling, will vindicate the attempt and obtain your concurrence and approbation. I shall therefore commence, without longer preface, my remarks on those points which, on a necessarily hasty perusal of the List, have principally seemed to demand explanation or correction. I am obliged, from want of time for making the necessary comparisons, to omit the greater part of the Cryptogamia for the present, and, therefore, begin at a point from which a coincidence of subject-matter commences between Mr. Höll's List and the first part of my *Primitiæ*, published in the "Transactions of the Cambridge Philosophical Society," namely, the

FILICES.

"Lycopodium *Selago*, Linn."—This is *L. suberectum*, nob. in C. P. S. Tr.

"Ophioglossum *Lusitanicum*, Linn.," is extremely rare and local. I have only found it in a single spot at the western point of the Island (Porta de Pargo), though growing there abundantly in a small piece of wet splashy ground, amongst the grass, at a trifling elevation above the sea. Some misapprehension has, therefore, occasioned Mr. Höll's quoting me for its occurrence "on almost all the high mountains."

"Gymnogramma *Totta*, Schlecht." is *G. Lovei*, Hook. et Grev. *Ic. Fil. t.* 89. Though I have myself quoted the former synonym with a mark of doubt in the Cambr. Trans., the identity of a Cape with an indigenous Madera species appears, *prima facie*, extremely improbable, and not to be decidedly affirmed without an accurate comparison of authentic specimens of each. The Madera plant grows abundantly in all the shady wooded ravines of the Island.

"Nothochlæna *lanuginosa*, Desv.," occurs occasionally on walls about Funchal and Santa Cruz, on the *south* coast.

"Asplenium *Trichomanes*, Linn." It can hardly be doubted that this is *A. anceps*, Soland. et nob. in Cambr. Tr. and of the *Icon. Fil. t.* 195.

"Asplenium *Canariense*, Willd., on walls." I am much inclined to suspect this is A. *lanceolatum*, Huds., and not the true A. *Canariense*, which is extremely rare on the south side of Madera, where Mr. Höll chiefly botanized, though tolerably plentiful in some of the ravines of the north side. I distinctly recollect Mr. Höll directing my attention to A. *lanceolatum*, Huds. (which is not uncommon *on walls*), as a new species; and yet, unless it be this A. *Canariense*, or, though still less probable, "A. *rotundatum*, Klfs.," of his List, it is altogether omitted.

Of "A. *rotundatum*, Klfs., on a wall at Funchal," and "A. *ebenum*, Ait.," I can say nothing positively, having no acquaintance with the former even by description, and not having met with any plant in Madera bearing more than a remote resemblance to the latter North American species.

"Asplenium *acutum*, Bory." It is very questionable whether the Madera plant really differs specifically from the Europæan A. *Adiantum nigrum*, L. It appears to me that there are no better reasons for regarding it as more than a luxuriant form, or, at most, variety, than in the case of the Madera *Maiden-Hair* (*Adiantum Africanum*, R. Br. in App.

to Tuckey's Voy.), which Mr. Höll himself does not distinguish from A. *Capillus*, Linn.

" Aspidium *auriculatum*, Sw.," ought, no doubt, to be A. *falcinellum*, Sw. See *Primitiæ, Faunæ. et Floræ Mad.* in Camb. Phil. Soc. Tr. p. 5, n. 1.*

" Aspid. *Filix mas*, Sw.," is probably A. *affine*, nob. MSS. a very nearly allied species indeed, whose characters I shall shortly publish in the Camb. Tr. Of what I consider the genuine A. *Filix mas*, Sw., I have never found specimens in Madera.

" A. *spinulosum*, Sw.," is probably A. *elongatum*, Sw.

" A. *dilatatum*, Sw.," is no doubt my A. *fœnisecii.*

" A. *lobatum*, Sw.," is perhaps rather A. *angulare*, Sm. not Willd., according to Mr. Arnott, who also considers Smith's plant identical with A. *orbiculatum*, Desv., and with A. *lobatum* of Willd. and of Hooker, but not of Swartz.

" A. *regium*, Sw.," I have never found; but A. *fragile*, Sw. is extremely common, and, no doubt, the plant here intended.

In identifying most of the above Ferns, I have been guided as well by the affinities of the species as by considerations of a general nature; and the four last are so common, that it is impossible to suppose that they are not contained in Mr. Höll's List, though under different names from mine. It has, however, two species, *Aspid. patens*, Sw., and *Aspid. Oreopteris*, Sw., for which I cannot, on any principles, account: and I, on the other hand, possess two, which cannot be identified either with these or with any others of his List. So that it will be better to subjoin a copy, in parallel columns, of our respective lists of *Aspidium*, and afford to others, one, at least, of the modes of judging by which I have been influenced in the preceding rectifications.

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* "*Primitiæ Faunæ et Floræ Maderæ et Portus Sancti;* sive species quædam novæ vel hactenus minus rite cognitæ Animalium et Plantarum in his Insulis degentium breviter descriptæ, curante Ricardo Thoma Lowe, A. M. Coll. Chr. Cant. et nuper ab eadem Universitate Bacc. Perigr."— A truly classical production, which does my valued friend no less credit as a most observing and accurate Naturalist than a scholar and " travelling bachelor" of a great University.

Höll.	Lowe.
Aspid. *auriculatum*, Sw.	Aspid. *falcinellum*, Sw.
—— *patens*, Sw.	
—— *molle*, Sw.	—— *molle*, Sw.
—— *Oreopteris*, Sw.	
—— *Filix mas*, Sw.	—— *affine*, nob.
—— *spinulosum*, Sw.	—— *elongatum*, Sw.
—— *dilatatum*, Sw.	—— *fœnisecii*, nob.
—— *lobatum*, Sw.	—— *orbiculatum*, Desv.
—— *regium*, Sw.	—— *fragile*, Sw.
	—— *frondosum*, nob.
	—— *drepanum*, Sw.

This last, indeed, (A. *drepanum*, Sw.) proves, as I all along suspected, to be a genuine species of *Polypodium* (P. *drepanum*, nob.): but this is a discovery ulterior to the publication of Mr. Höll; and the plant is therefore placed amongst the *Aspidia* for comparison, as by him it would have been, unless he had found it in fruit, which his List shows he did not.

"Adiantum *Capillus*, Linn.," is A. *Africanum* of Mr. Brown in the Appendix to Tuckey's Voyage; but can scarcely be considered more than a large or luxuriant state or variety of the common Europæan plant, to which it is referred by Mr. Höll.

"Cheilanthes *fragrans*, Sw." This appellation was indeed formerly applied to the Madera, or Funchal, plant, by Swartz himself, yet with a degree of hesitation, "A Madera forsan species diversa!" *Syn. p.* 127.: see also *p.* 326. But I am disposed to go so much farther than Swartz, as to consider the Madera plant decidedly a very distinct and well-marked species, not only from *fragrans*, but from all others; and shall shortly describe it as such in the Camb. Trans., by the name of C. *Maderensis*. The scent, which Mr. Höll compares to that of cinnamon, appears to my organs, as well as to those of others to whom I have submitted it, exactly similar to that of fresh hay, of *Anthoxanthum odoratum* L., *Asperula odorata*, L., or the various kinds of *Melilot*.

" Dicksonia *Culcita*, L'Herit." Since Mr. Höll was in Madera, I have met with it in tolerable abundance in some parts of the north, far in the recesses of the mountains.

I come now to the *Phænogamous* Plants.

" Avena *strigosa*, Schreb." If by this it be intended to designate the very common *wild oat* of Madera, which may reasonably be supposed, since it is otherwise altogether omitted, the name is surely incorrect; the Madera plant wanting, besides other things, the two terminal awns to the outer glume of the corolla, which have caused Schreber's plant to be referred to *Danthonia* of Beauvois. The common species of Madera is probably *Avena hirtula*, Lag.; and I have never met with any species here at all agreeing with A. *strigosa*, Schreb.

" Triticum *durum*, Desf.," is most certainly not " the only species of wheat cultivated in Madera." There are two or three species, at least, besides varieties, known to the country people: and amongst these I have not discovered T. *durum*, Desf. at all, and I do not think that it exists in the Island. The species of most common (almost universal) occurrence, particularly in the neighbourhood of Funchal, and constituting what may be considered the staple produce in grain of Madera, belongs to quite a different race or groupe, that of T. *æstivum*, L., at once distinguishable from T. *durum*, Desf., by its smooth (not pubescent) glumes, and naked (not villous) spike or ear. The grains also of Madera Wheat generally are short, remarkably plump, and large, and composed almost entirely of farina; instead of being long, principally corneous and hard, as in T. *durum*, Desf.; and these qualities are so notoriously characteristic of the wheat of this Island and Porto Santo, and have so tended to establish the general opinion of its superiority as a staple produce, that it is hard to imagine the very inferior properties of T. *durum* should not have altogether prevented its becoming an object of cultivation in Madera, in competition with a sort so much better and already established. Of T. *hybernum*, L., or a closely allied species, I have also fresh specimens now lying before me, gathered in the immediate neighbourhood of Funchal. This species is, however, of far less ordinary occurrence than the former. Mr. Höll was misinformed in respect to the mode of gathering the wheat-crop here. Like most other crops, it is pulled up by the hand, universally, instead of being cut down or reaped by the sickle.

"Saccharum *officinarum*, L." An attempt was made about five years ago, by a Portuguese of somewhat more than ordinary enterprise, to renew the manufacture of sugar in this Island. The article produced was both cheap and of excellent quality, being well-flavoured, highly saccharine, and pure; resembling what was commonly sold in England a few years ago (as it may be still) for sweetening coffee, under the name of Sugar-candy. The cultivation of the plant was again rapidly spreading; for, to a certain extent, it may be grown here without materially interfering with the *Vines;* either under the high trellises on which these are supported in the neighbourhood of Funchal, or in spots less favourable for the production of the grape, or, lastly, in waste bits of ground around the cottages of the peasantry. Every thing, in short, was proceeding prosperously. Notwithstanding heavy drawbacks, in the way of imposts or taxes, whether on the raw material or sugar produced, the manufacturer was still able at once to derive a fair profit, and to sell cheap enough to command a ready market. But political changes in 1828 caused the suspension or abandonment of the whole undertaking, and now the *Cane* is again fallen into neglect; the only object for growing it being the production of what is called by the Portuguese, who appear much to relish it, "*Mel*," (honey). This is merely the juice of the cane extracted in the ordinary way, by crushing and pressure, in a mill for the purpose, and then inspissated by boiling to the consistence of a thin syrup. This is commonly carried about the streets for sale in bottles. Pieces of sugar-cane are also a frequent Christmas-present among the Portuguese.

The sugar used commonly in Madera is, and ever was, imported almost entirely from Lisbon (a little being only occasionally introduced from London, or direct from Brazil,) *not* exclusively by the English; and it all comes originally from the Brazils.

"Carex *muricata*, Linn." The very common *Carex* of Madera is certainly C. *divulsa*, Good.; but according to Professor Henslow's observations, it may nevertheless be also rightly named by Mr. Höll. I must observe, however, that I have never been able to discover the least tendency in the Madera plant, which abounds every where, to depart from the form of C. *divulsa* and approach to that of C. *muricata*.

"Gladiolus *Byzantinus*, Mill." Had Mr. Höll procured this plant in flower, he would have discovered it to be not G. *Byzantinus*, Mill., but G. *segetum*, Ker, in Bot. Mag. t. 719, (G. *communis*, Sm. in Fl. Gr., not Linn.) On account of the thin pulp surrounding the kernel of the seed beneath the spermoderm, this plant was afterwards referred by Mr. Ker to *Antholyza*. By others it has been distinguished, on account of this character and the subglobose shape of the seeds, as a genus; under the somewhat inappropriate name of *Sphærospora*.

"Amaryllis *Belladonna*, Linn." Not by any means local, as Mr. Höll's observation would imply, but abounding everywhere in the Chestnut woods. In the north, I have witnessed whole acres in the woods completely covered in October with its lovely flowers; a scene exceeding in beauty even the dreams of poets.

"Dioscorea *sativa*, Linn." The plant here intended is, without a doubt, my *Tamus* or *Tamnus edulis*. See Camb. Trs. The true D. *sativa*, L., I have no where seen in the Island; but D. *alata*, L. is still perhaps existing in one or two gardens, though merely as an object of curiosity.

"Allium *Cepa*, Linn.," has no more title to a place in the Madera Flora than in a Flora of Germany, France, or England.

"Dracæna *Draco*, Linn." The "*wood*" of D. *Draco*, L., though it has scarcely any title even to the name, is perfectly incapable of application to any useful purpose, even for firing. I have been able to obtain no credible evidence, and know no reason whatever to suppose the tree was at any time more common than at this day; though it is certainly not of such unfrequent occurrence as Mr. Höll had reason to believe it.

" * Orchis *longibracteata*, Bivon." For this error I must be considered in a great measure responsible, not having completely satisfied myself of the distinctness of the Sicilian from the Maderan plant, till after the period when Mr. Höll saw it in my collection. This is *Orchis foliosa* of my *Primitiæ*.

The other Orchideous plant alluded to by the name of *Satyrium diphyllum*, Link, is a genuine *Habenaria* (H. *cordata*, R. Br. and *Botanical Miscellany*, *v.* 1. *t.* 55.), and is found plentifully in all the shady ravines of the Island, particularly on the north side. Though possessing little outward beauty, and, therefore, but slender claims to the notice of the mere florist or collector, there are few plants more interesting than this to the physiological botanist, from the presence and large size of two staminodia or abortive stamens; which are placed, one on each side, at the back of the anther-case. They are whitish, club-shaped, and nearly or quite as large as the perfect pollen-masses. An outline sketch, taken here from the wild plant a long time ago, may be interesting for comparison with the more complete illustrations from cultivated specimens already given by you in the *Bot. Magazine.**

I have never observed any scent in the flowers of this plant in Madera during the day; but, since you say it is most odoriferous at night, it perhaps even here possesses nocturnal fragrance, which I have not had an opportunity of observing.

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* The true structure of the flowers of this very interesting plant has been represented in the *Botanical Magazine*, *t.* 3164, since its appearance in the *Botanical Miscellany*.—*W. J. H.*

"Cocos *nucifera*, Linn." This is quite a slip of the pen for *Phœnix dactylifera*, L., of which there are several fine trees in Funchal, as well as in the villages all along the south coast of Madera, and about the town of Porto Santo. Though the *Date-tree*, in order to bring its fruit to perfection, requires, according to Professor Schouw, a mean temperature of 21° Centigrade, or about 70° F., while that of Funchal scarcely exceeds 65° or 66° F., I have tasted very tolerable *Dates* produced by some of these trees in Funchal. Yet they certainly do not ripen well; they want sweetness, and have not, I believe, been ever known to germinate like those of Catania, whose mean temperature is also nearly the same as ours, viz. 18-19° Cent. according to Schouw. Their ripening here at all is somewhat precarious, depending on the favourableness of the season.

It is scarcely necessary to add, that the real *Cocoa-nut* could not be here intended, for there was only one wretched starved plant of it in existence in the Island during Mr. Höll's residence, and this not above two feet high, growing in Mr. Penfold's garden at the Achada.

"Cupressus *glauca*, Linn.," being admitted into the List, I do not see why many other common plants, much less peculiarly the mere inmates of gardens, are excluded.

"Quercus *pedunculata*, Willd.," is at present as much a garden-plant here as the last. It has not been introduced above twenty-five years, but grows well, even in the lowest or tropical region of the *Cactus*; and, at an elevation of 200 feet, thrives prodigiously.

"Parietaria *Maderensis*, Reichb.; fruticulosa, ramis assurgentibus simplicibus foliisque ovali-acuminatis obtusiusculis villosis, glomerulis paucifloris."—How is this to be distinguished from the common Europæan P. *officinalis*, L.? I have carefully scrutinized a specimen given me by Mr. Höll himself, and compared it with numerous others that I gathered, on the very rocks from which Mr. Höll obtained his, a low basaltic reef, stretching into the sea, called the "Gorgulho," about a mile and a half to the westward of Funchal: and the only appreciable differences between these and others gathered a little more remote from the sea, or in less exposed situations, are a somewhat more bushy and dwarfish habit, and shorter or smaller leaves, which, in the recent plant, are also rather more shining perhaps than usual. Such specimens are by no means confined to this spot, but are found on every rock or wall of peculiar aridity or sunny exposure: and, as it may well be supposed, where the differences are so slight, every intermediate grade is found leading into more luxuriant, larger-leaved, stouter individuals, which, as well as the above, I am quite unable to distinguish from P. *officinalis*, L. It is one of the very commonest plants of the Island; occurring on almost every rock or wall, chiefly below 1000 feet, in an endless variety of modifications of size and luxuriance, as in England and elsewhere. My P. *gracilis* is a very different species, both in characters, habit, and locality; being an extremely rare sylvan plant, which I have only yet found in a single spot.

" Ficus *Carica*, Linn.," occurs principally on the south coast, but not exclusively so, being cultivated in most places of similar low elevation also on the north coast. And, which is more remarkable, the only occasion on which I have met with the *Fig* in a naturalized state in Madera was ten or twelve miles up one of the principal ravines in the north, that of the Ribeira de S. Jorge, far beyond every vestige of cultivation; whither it must have owed its introduction solely to accident, and where it was flourishing prodigiously, though at a considerable elevation.

The inferiority of the dried figs of Madera to those that are imported, is owing entirely to ignorance of the proper mode of preparation, added to the difficulty arising from a climate in which a constant and most copious deposition of moisture takes place on all substances possessed of more than ordinary powers of radiation, or which, by rapid evaporation from their surface, are cooled down to a lower temperature than that of the warm circumambient atmosphere of Madera,—such as metals, smooth leather, and plants or fruits undergoing the process of drying for the herbarium or for domestic purposes. From both these causes, but chiefly the last, it is, that, not only the *Figs*, but the *Raisins*, dried in Madera, are of very indifferent quality: not from any deficiency, in either size or flavour, of one more than the other; and the excellence of the *Grapes* I have no occasion to vindicate. The fresh *Figs* of Madera particularly, in both the above qualities, but especially the latter, cannot be surpassed.

"Galium *minutiflorum*, Brot." Brotero's plant is properly a synonym of G. *Parisiense*, L. (G. *litigiosum*, DC.) This plant, with its hispid fruit, I have never found in Madera; but G. *Anglicum*, Huds. is very abundant; and since it is otherwise omitted by Mr. Höll, I suspect that he means, by his "G. *minutiflorum*, Brot.," what I call G. *anglicum*, Huds.; and that he follows the example of those who have not considered its smooth (though granulated) fruit sufficient to distinguish it from G. *litigiosum*, DC.

"Galium *aristatum*, Linn." This being the only other *Galium* in the list, it can hardly be doubted that by it is intended a *Galium* still more common in Madera than the last, which I have published as a new species in the Camb. Trans., under the name of G. *productum*. No species, even of *Galium*, appears attended with more difficulty and confusion than G. *aristatum*, L.; and almost every botanist has, under this name, his own peculiar plant,—the adopted favourite of his particular views. By one it is considered synonymous with G. *linifolium*, Lam.; by another, with G. *Tyrolense*, Willd.; by a third, with G. *erectum*, Huds.; by De Candolle with his G. *Mollugo*, β.; while Smith, in his *English Flora*, describes a Scotch plant by this name as positively distinct from all these as well as others. It is quite evident from this statement, which might, however, have been considerably extended, that G. *aristatum*, L., is, so far as books go, a perfect *ignis fatuus*: and the only plant described under this name, worthy of attention as authentic, is that of Smith; because, though he does not expressly state the fact, he alone may be justly supposed to have identified his plant with Linnæus' original specimen of G. *aristatum*, which, if it exist any where, for the species after all may very possibly have been taken up by

Linnæus only from Boccone or Barrelier, must have existed in Linnæus' Herbarium in Smith's possession. Now, from Smith's plant mine differs in having whorls of 8 rigid, not 6 or even fewer "pliant," leaves; and the petals obtuse and mucronate, not "*taper-pointed.*" These are some of the most striking points of differences, but others exist: and though with no better means of judging than from the description, I consider myself fully warranted in keeping my plant distinct from this, and, therefore, probably from the genuine G. *aristatum*, Linn. If, however, it prove that no authentic specimen really exist in the Linnæan Herbarium of his plant, Smith's will be entitled to no more authority than the conjectures of others are, and G. *aristatum*, Linn., must ever continue involved in doubt and obscurity. On every ground, therefore, I find no reasonable pretence to admit the name as a designation of the Madera plant, which, indeed, always appeared to me more nearly allied to G. *cinereum*, All., than to any thing described under the name of G. *aristatum*, Linn.: and I am even now not without doubts whether it may really be deemed sufficiently distinct from that species. In the Banksian Herbarium, it is referred to G. *Mollugo*, Linn.; from which, however, it is quite distinct: this, by the way, is a curious coincidence in the chain of conjectures about G. *aristatum*, Linn. The Madera plant is referred by Höll to G. *aristatum*, L.; and in the Banksian Herbarium to G. *Mollugo*, L.; and again L. *aristatum*, L., by De Candolle to G. *Mollugo*: the Banksian Herbarium thus directly affirming the same identification, which only follows, by necessary *inference*, from the independent conjectures of De Candolle and Mr. Höll. The erroneous result, though supported by the Banksian Herbarium, proves an error to lie with one or the other of these botanists.

"Carlowitzia *salicifolia*, Mœnch," is entirely a rock plant, not very unfrequent in the ravines of the interior.

"Ageratum *conyzoides*, Linn.," is common every where below 1000 feet, by water-courses, or in waste moist ground by road-sides.

"Bidens *leucantha*, Willd.," is one of the very commonest weeds; too abundant every where in moist or rich ground.

"Antennaria *leucophylla*, Reichb."—Gnaphalium *crassifolium*, Linn., abounds on rocks by the sea, round the whole coast; not at "Camera de Lobos" in particular. I cannot doubt it is the plant here intended; for it is assuredly what Bowdich called G. *tomentosum*; and it is also certainly not specifically distinct from the Europæan (Majorca and Minorca) plant, at least generally known by the name of G. *crassifolium*, Linn.; of which Mr. Höll suggests his suspicion. Linnæus, indeed, gives the Cape of Good Hope as the habitat of his plant; but the description in his *Mantissa* so accurately applies to ours, as to leave little doubt of its identity. It is even possible that his habitat, the Cape, is erroneous, for the *Hortus Kewensis* gives Majorca and Minorca; and then the only objection to the identity of the plants vanishes.

"Elichrysum *melaleucum*, Reichb.," is undoubtedly my Gnaphalium *melanophthalmum* in the Camb. Trs.; the G. *rupestre* of the Banksian Herbarium and Solander's MSS. Though I had called it Helichrysum *melanophthalmum* in my own MSS. (considering it to belong to *Helichrysum*, Don, in Wern. Soc. vol. 5.) long previous to its publication, I preferred, then, continuing the old name *Gnaphalium*, till the appearance of the 5th vol. of the *Prodromus* of Professor De Candolle should finally settle the various groupes into which that genus is divisible; changing the MSS. name of *rupestre*, because Rafinesque had previously published a *Gnaphalium* under that name. The plant is by no means confined to the ravine indicated by Mr. Höll (Curral das Freiras), but common to most in the Island; though in none very abundant.

"Phagnalon *saxatile*, Cass.," Conyza *saxatilis*, Linn., is one of our commonest rock-plants every where; at almost all elevations, but chiefly below 3000 feet.

"Bellis *perennis*, Linn.," is merely naturalized very partially in only a single spot (about the Church and Pilgrims' House of St. Antonio da Serra), whither it was introduced about thirty years ago amongst grass-seeds from England, by an English merchant yet alive.

" Pyrethrum *grandiflorum*, W.," is a Canary-island plant, not occurring in Madera. The plant intended is undoubtedly Chrysanthemum *pinnatifidum*, L.

" Calendula *amplexifolia*, Reichb., *acheniis interioribus inflexis reticulato-scrobiculatis submuricatis, externis triangularibus dorso dentatis, foliis amplexicaulibus;* found only once near the city."—I am much inclined to suspect that this was some imperfect state of Calendula *arvensis*, L., otherwise altogether omitted in the List, though one of the commonest and most abundant weeds in the Island. Its proper flowering season is in the winter or early spring months; and as Mr. Höll chiefly botanized in summer, the difference of the season will account for the rarity of his plant, as well as for any supposed variations from its real specific type. Calendula *maritima*, nob. MSS., a yet undescribed species, is also found in Madera, but not " *near the city*," nor in any place likely to be visited by Mr. Höll: but even setting aside this objection, it is hard to suppose the very peculiar and well-marked characters of its seeds would not have been so distinctly expressed by Reichenbach, as to preclude all future doubt. Calendula *officinalis*, L., is also a frequent inmate of gardens. However, C. *arvensis*, L., deprived, as frequently happens in drying, of its characteristic long-beaked muricated outer row of seeds, agrees, perhaps, as well as even C. *maritima*, nob., with the characters assigned to C. *amplexifolia*.

" Achillea *Millefolium*, Linn.," only occurs occasionally in gardens.

" Rothia *cheiranthifolia*, Roth," and " R. *picroides*, Reichb." —Of *Rothia*, or rather *Andryala*, I have very numerous forms, varieties, or species, according to some authors, but will not pretend to determine the particular plants intended by the above designations. However, it may be reasonably supposed that by " R. *cheiranthifolia*, Roth," is intended our commonest plant of the groupe; though both this, as well as every other form or species found by me in Madera, has the generic characters of *Andryala* rather than of *Rothia*. Where has R. *picroides*, Reichb., the other species indicated, been described?

" Schmidtia *fruticosa*, Mœnch, S. *anethifolia*, Reichb., S. *quercifolia*, Reichb." Where are these described? They are probably intended to designate some of the new species of *Crepis* or *Borkhausia* proposed by me in the Camb. Phil. Soc. Trs.; together, perhaps, with Crepis *succulenta*, Ait.; but more than this it is impossible to determine. However, Crepis *succulenta*, Ait., C. *pectinata*, nob., and C. *macrorhiza*, nob., being all three very common species not likely to escape Mr. Höll's scrutiny, may be supposed at present with some probability, to be intended by " Schmidtia *fruticosa*, Mœnch, S. *anethifolia*, Reichb.," and S. *quercifolia*, Reichb.: though the three former are all found on the most sunny, not " shady" rocks.

" Campanula *Erinus*, L.," is very common on walls and rocky banks about Funchal, and on rocks at a much greater elevation. Mr. Höll's asterisk should have been placed before the preceding species, the very rare Muschkia *aurea*, DC. (Campanula *aurea*, L.), which I had the pleasure of first showing to him on its native rock.

" Salvia *Verbenaca*, Linn." This is S. *dubia*, nob. (S. *collina*, nob. olim in Camb. Trs., non Humb. and Bonpl.) Having inadvertently used formerly a pre-occupied specific name for this plant, it becomes necessary to give it now a new one; for I have not been able yet to ascertain that it is absolutely and essentially the same as S. *polymorpha*, Hoffm. (S. *verbenacoides*, Brot.)

" Lavandula *Stœchas*, Linn., var. *Pseudo-stœchas*, Reichb." This is undoubtedly L. *viridis*, Ait.

" Sideritis *candicans*, Ait.," is by no means uncommon on rocks in all the ravines, from 2000 to 4000 feet, as well as near the sea.

" Origanum *virens*, Link," is rather O. *creticum*, L.

" Mentha *pulegioides*, Reichb."—Where is a published description of this to be met with? I suspect it is intended to designate a plant which almost covers the mountains of Madera in July and August, and which I am inclined to consider synonymous with No. 2. Pulegium *erectum* of Miller, (the Mentha *Pulegium* β. of Martyn's Ed. of *Miller's Dictionary*), sent to Miller from Gibraltar.

"Lamium *maculatum*, Linn." Is not this rather L. *purpureum*, L., which, as well as L. *amplexicaule*, L. (not mentioned by Mr. Höll,) I have found in Madera, though I never met with the true L. *maculatum*, L.?

"Thymus *ericæfolius*, Roth." This is doubtless my Satureja *thymoides*, Sol.; probably also Thymus *terebinthaceus*, Willd.—See *Primitiæ*, &c.

"T. *calaminthoides*." Where and by whom is this species established? The very common Madera plant most probably intended by this designation, can scarcely be considered distinct from *Melissa Calamintha*, L.

"Roemarinus *officinalis*, Linn.," grows only about cottages, and is but partially naturalized.

"Ajuga *reptans*, L.," "Glechoma *hederacea*, L.," and "Betonica *officinalis*, L.," I have no where met with either in Madera or Porto Santo.

"Convolvulus *edulis*, Thunb." The Madera "*Batata*," will undoubtedly scarcely admit of reference to the C. *Batatas*, L.; and yet its identity with Thunberg's C. *edulis* would require better substantiation than a mere comparison of characters. It is possible Mr. Höll may have other very sufficient grounds for his reference; though I am almost afraid a vague idea of my own, in the absence of better authority, has influenced him in deciding on the identity of the Madera and Thunberg's plant.

"Veronica *Beccabunga*, Linn.," I have no where seen: but a variety of V. *Anagallis*, L., is common; and this, I think, must be the plant intended.

"Trixago *scordifolia*, Reichb., *patente ramosa, foliis ovato-oblongis obtuse serratis glabris*:—singly in shady woods on the north coast." This, notwithstanding the word "*glabris*," is undoubtedly Euphrasia *Hölliana*, nob. Whatever be thought of its genus, I hope it may be allowed to commemorate, by its specific name, the activity, zeal, and laborious exertions of Mr. Höll in Madera, carried on under a pressure of most serious and undeserved difficulties.

In respect to " Physalis *pubescens*, Linn.," or " P. *edulis*, Sims," I must observe that poor Bowdich has too many botanical sins to answer for, to bear being charged with more than he really deserves. He does not exactly describe the Cape Gooseberry "*as new*," but proposes a new genus, (*Herschelia*,) certainly very unnecessarily, for its reception.

" Jasminum *odoratissimum*, Linn.," is truly indigenous, though very rare. It is confined to the sea-cliffs, or rocks in the neighbourhood of the sea.

" J. *Azoricum*, Linn.," however, is entirely confined to gardens.

" Bupleurum *coriaceum*, Ait." The plant here intended proves essentially distinct, not only from B. *coriaceum*, Ait., but from every other species recorded in the 4th vol. of De Candolle's *Prodromus*. I shall shortly publish it in the Camb. Trs. under the name of B. *salicifolium*, by which it was long since distinguished by Dr. Solander.

" Œnanthe *fistulosa*, Linn." I am quite unable to conceive what plant is here intended: for the true Œ. *fistulosa*, L., is very unlikely to occur in a country so entirely devoid of marshes or watery places as Madera; putting out of the question my own experience. Is it possible that some imperfect or monstrous state of my Œnanthe *pteridifolia* may be here intended? This grows on wet dripping rocks, and I have seen states of it with the leaflets almost reduced to the midrib by the corrosion or decay of the parenchyme caused by the constantly falling water; and then bearing some resemblance to those of Œ. *fistulosa*.

" Condalia *coriacea*, Reichb. (Rhamnus *coriaceus*, Nees v. Esenb., R. *integrifolius*, DC.") I have not a doubt that the plant designed is Ardisia *excelsa*, Ait., in too imperfect a state of fructification to enable its true name to be assigned. Specimens in such a state, gathered after the petals had fallen, and with the fruit still young, were for some time mistaken also by me for the true Rhamnus *integrifolius*, DC., till more perfect individuals enabled me to ascertain their true nature beyond all question or possibility of doubt. And it is very probable that I gave some of these, with the above erroneous name, to Mr. Höll, which occasioned his mistake. The true R. *integrifolius* certainly does not occur in Madera.

"Dolichos *lignosus*, Linn.," is quite confined to gardens.

"Lotus *odoratus*, Schousb.," may be either Dorychnium *parviflorum*, DC., Lotus *diffusus*, Sol., or Lotus *divaricatus*, Sol. MSS.; all three common species, not otherwise enumerated by Mr. Höll.

"Cactus *Opuntia*, Linn." The Madera *Cactus* is certainly Opuntia *Tuna* (Mill.) DC.; and neither the O. *vulgaris* (Mill.) DC., (Cactus *Opuntia*, L.), nor O. *Ficus indica*, (Haw.) DC., (Cactus *Ficus indica*, L.); both which have yellow, not dull reddish-orange flowers, and no long spines, besides other differences. It is singular that almost every writer, whether botanist or not, should have called the Madera plant either Cactus *Opuntia* or C. *Ficus indica*, when it is so very distinct from both, and so clearly the "*Tuna major*, *spinis validis flavicantibus*, *flore gilvo*" of Dillenius in his *Hort. Eltham. p.* 396. *t.* 295. *f.* 380.; and also the Cactus *Bonplandii*, Kunth, *Nov. Gen.* VI. *p.* 69. I scarcely understand what Mr. Höll means by "a gum similar to the *Tragacanth* exuding from the old leaves." I have occasionally seen gum on the stems, but in very small quantities; nor does it appear possessed of any peculiar qualities whatever.

"Chenopodium *ambrosioides*, Linn." is an universal weed.

"Amaranthus *strictus*, W." It should have been noticed, that being unable to consult Willdenow's Monograph of the genus, I am not quite sure whether my plant may not prove rather a state of A. *retroflexus*, W.

"*Alchemilla *vulgaris*, Linn." This is unquestionably a slip of the pen for Alchemilla *arvensis*, Lam. (Aphanes *arvensis*, L.), very common on the mountains.

As to *Roses*, though the gardens of Madera cannot certainly boast of the thousand and one sorts cultivated by our English nursery-gardeners, there are still enough to vindicate them from Mr. Höll's libellous statement, that "Rosa *Benghalensis*, Pers. is almost the only Rose cultivated in the gardens." It is certainly the most *common* one, insomuch that the Portuguese, by way of expressing their contempt for its vulgarity and comparative want of fragrance, style it, *par excellence*, "*Rosa Ingleza*," *English Rose;* appropriating the name of "*Rosa Portugueza*," to the more fragrant or rarer sorts, particularly to the common *Damask Rose* (R. *Damascena* (Mill.) DC.:—a small trait of national vanity or assurance, very allowable, where the grounds of self-importance are not peculiarly extensive.

Potentilla *anserina*, Linn." I have never met with this plant, though it is not one likely to escape observation. Can it be a slip of the pen for P. *nemoralis*, Nestl., which is common in the mountains, though otherwise omitted by Mr. Höll. ?

"Epilobium *obscurum*, Schreb.," E. *parviflorum*, (Schreb.) Sm. is our commonest species. I also take it for granted that "E. *obscurum*, Schreb.," is synonymous with E. *tetragonum* (L.) Sm.

"Circæa *Lutetiana*, Linn.," I have never seen here.

"Lythrum *flexuosum*, Lag." This is L. *junceum*, Sol., of my *Primitiæ;* and I think sufficiently distinct from Lagasca's plant.

"Psidium *pyriferum*, Linn." Mr. Höll's own correct epithet of "*apple-shaped*," applied to the fruit, will bear me out in asserting that the Madera *Guava* is properly P. *pomiferum*, L.

"Prunus *Lusitanica*, Linn.," is merely found in gardens.

"Teesdalia *caulescens*, Reichb., *differs from* T. Iberis *by a leafy, frequently branching stem, and a deeper notched pod.* I cannot consider this distinct from T. *nudicaulis*, R. Br. (T. *Iberis*, DC.) The points above insisted on are highly uncertain, insignificant, and variable, as I find by a scrutiny of specimens, compared with some of the very individuals given me by Mr. Höll, which he gathered "at a little spring near the top of Pico Ruivo." The plant is extremely abundant every where above an elevation of 3000 or 4000 feet.

"Hesperis *diffusa*, Banks." It is scarcely necessary to observe that this is Sinapidendron *frutescens*, nob. in Camb. Trans. (Sinapis *frutescens*, Ait.)

"Sinapis *arvensis*, Linn." The very common *Sinapis* in corn-fields is S. *incana*, L.—S. *arvensis*, L., I have not seen here.

"Fumaria *capreolata*, L.," and "F. *officinalis*, L." I have never found the latter.

"Viola *odorata*, Linn." This must be V. *Maderensis*, nob. in Camb. Trans.

"Nigella *sativa*, Linn." This is clearly a mistake for N. *Damascena*.

"Ranunculus *arvensis*, Linn." Never found by me. Possibly R. *muricatus*, L. is intended, which is very common by streams and in moist places by road-sides.

"Ruta *graveolens*, L." The very common wild Madera *Rue* is decidedly R. *angustifolia* (Pers.) DC., which is indeed also R. *graveolens*, *α*. L., according to De Candolle; though not the plant now generally known by the name of R. *graveolens*, L., which is the common (broad-leaved) *Rue* of English gardens; a plant I have never seen in Madera, even in cultivation.

"Malva *subhastata*, Cav." I will not venture a conjecture what this stands for: and I also suspect that Mr. Höll's other species, "M. *rotundifolia*, Linn.," is incorrectly named.

"Sida *rhombifolia*, Linn.," is, doubtless, S. *Maderensis*, nob. in Camb. Phil. Soc. Trans.

"Sida *Abutilon*, Linn;" Mr. Höll did not see his plant in flower; and I therefore think S. *populifolia*, Cav., must be what he intended.

"Geranium *Robertianum*, Linn." The Madera plant is G. *purpureum*, Vill. (G. *Robertianum*, *β*. Sm., DC., &c.)

"Erodium *citutarium*, Sm." A very nearly allied species, or perhaps only a variety of E. *cicutarium*, Sm., does indeed occur on the mountains in some parts of the Island; but with this, I am pretty certain, Mr. Höll was unacquainted; and the plant designed by him here is, no doubt, E. *moschatum*, L.; which is most abundant in roads, &c. about Funchal and elsewhere.

" Cerastium *arvense*, Linn." I very strongly suspect that by this is intended a species, C. *rupestre*, nob. MSS., of which I shall soon publish the characters in the Camb. Trans.; considering it as probably new. It is allied, indeed, but quite distinct from C. *arvense*, L., which I have never met with here.

" Hypericum *undulatum*, Schousb." Mr. Höll's list of *Hyperica*, bearing a perfect conformity with mine in every other respect, I am inclined to conjecture that he may mean by the above name what I have inadvertently called H. *angustifolium* in the Camb. Trans.; not having observed at the time that the name had been previously applied by Lamarck to a very different species. I propose, therefore, to call my Madera species H. *nubigenum*. For even supposing its identity with Mr. Höll's " *H. undulatum*, Schousb.," established, which it is not, I should be very doubtful still whether it were really Schousboe's true plant.

My notes have run on insensibly to a much greater length than I had anticipated. But the fault may not be altogether useless, if it serves for an expression to Mr. Höll of the value I attach in general to his publication, and of my obligations to yourself, my dear Sir, for the knowledge of it.

I remain ever,

Yours, most faithfully,

R. T. LOWE.

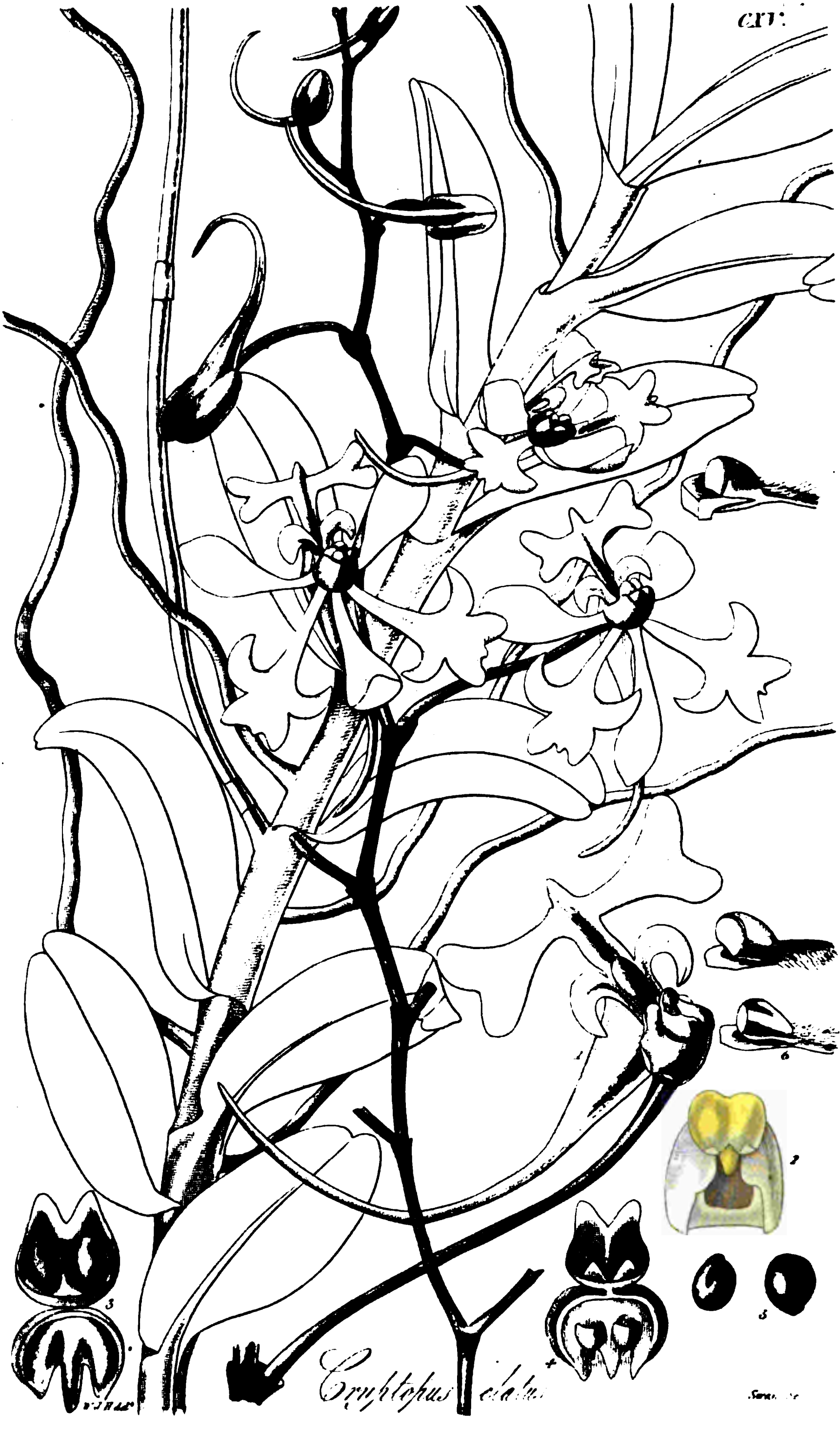
MADERA, *May 24th*, 1832.

[TAB. CXV. CXVI. CXVII.]

NEW OR RARE ORCHIDEÆ.

UNDER this head, I propose offering, from time to time, figures and descriptions illustrative of new or little known individuals of this most singular and interesting tribe of plants, which owe so much to the labours of Swartz, and Richard, and Thouars, upon the Continent, and of Brown, Bauer, and Lindley, in our own country. These authors have thrown a new light upon this, previously, obscure family, and have established generic and divisional characters upon a truly philosophical basis. It is impossible, at this time, to form an idea of the limits of the species. Linnæus reckoned 100 kinds; Persoon, in 1806, 477; Sprengel, the most recent author who has attempted to give a complete catalogue, includes 799 species. But daily experience assures us how much yet remains to be discovered in the warmer parts of the globe. Our gardens abound in such as was once thought impossible to cultivate, and our Herbaria contain much novelty: but all these will find a place in the invaluable "Genera et Species Orchidearum" of Professor Lindley. The *Hortus Siccus*, however, it is to be regretted, from the succulent nature of the subjects, conveys but a very inadequate idea of the form and structure of the recent plant; and it is only by the assistance of the most perfect state of the flower, or, what is better, the flower yet unexpanded, that they can be satisfactorily determined. As often as possible, some specimens should be preserved in spirits. In this state I have the good fortune to possess not a few kinds, from which many of the analyses will be made. In particular, I have been favoured with several from Mauritius, by Charles Telfair, Esq. and Professor Bojer; and some of these, which are not hitherto figured at all, or, if figured, inaccurately so, will form a part of the subject of the present brief sketch.

CXV.



Cryptopus elatus

W. J. H. del.

Swan sc.

CRYPTOPUS ELATUS.

Cryptopus *elatus.* (TAB. CXV.) *Lindl. in Bot. Reg. sub t.* 817.—Beclardia elata. *Rich. Monogr. des Orchid. des Isles de France et de Bourb. p.* 78. *t.* 11. *f.* 3.—Angræcum elatum. *Thouars, Orchid. t.* 79, 80.

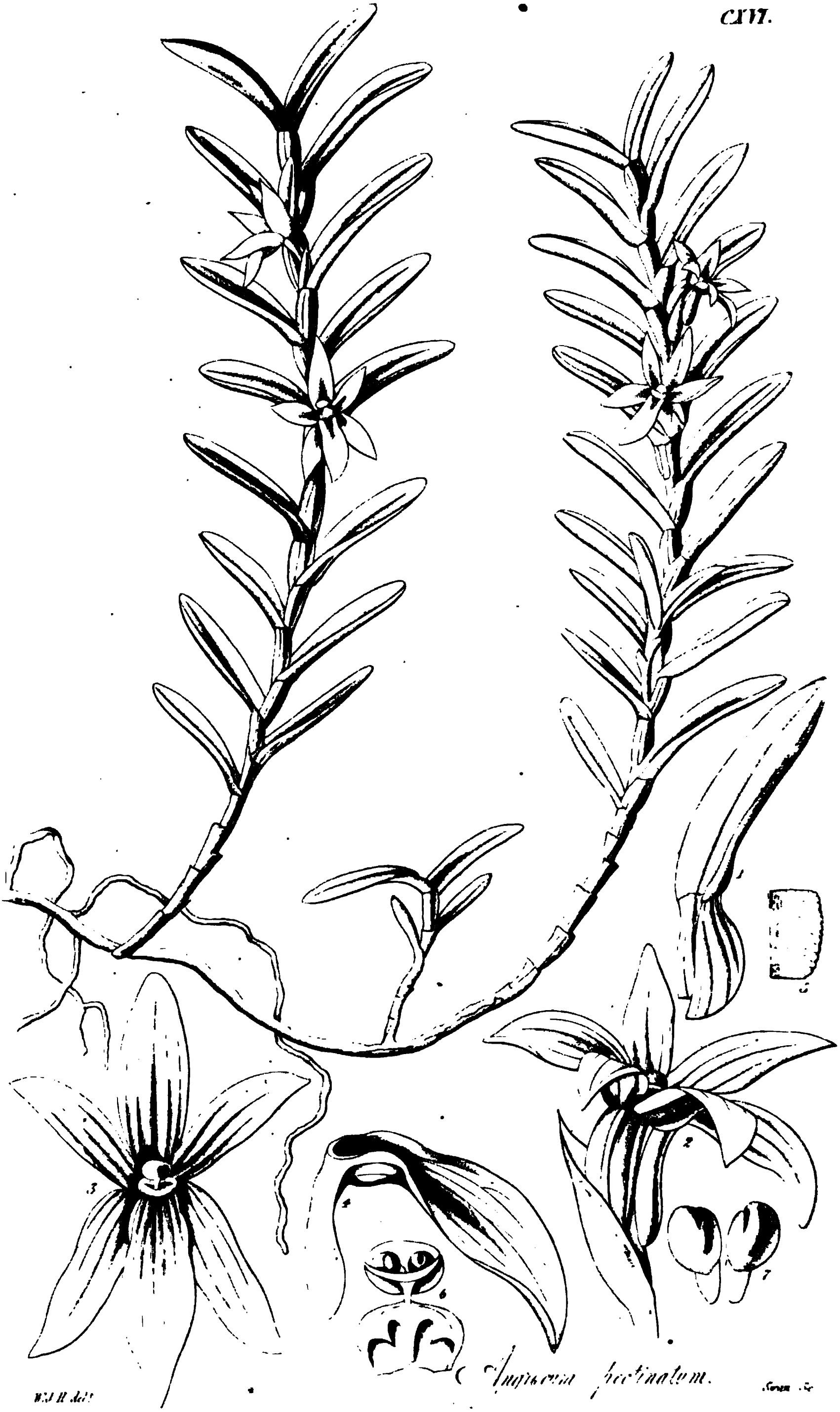
HAB. The Islands of Mauritius and Bourbon.

Caulis, ut videtur, erectus, elongatus, simplex, crassitie pennæ cygnei, subuncialis, hic illic fibris elongatis, rigidis, flexuosis, simplicibus instructus. *Folia* disticha, coriacea, brevia, 2 uncias longa, 6 lineas lata, basi vaginantia, apice oblique emarginata. *Pedunculus* sæpe bipedalis, erectus, teres, apice racemoso-subpaniculatus: *Flores* laxi, remoti, majusculi. *Bracteæ* ad basin pedicellorum nigro-fuscæ, membranaceæ, amplectantes, obtusissimæ. *Sepala* patentia, demum reflexa, omnia unguiculata: 3 *exteriora* spathulata, obtusa; 2 *interiora* lamina lata, 3-loba: lobis lateralibus lanceolatis, acutis, subrecurvis, intermedio fere obcordato, cum mucrone. *Labellum* superum, sepalis paulo brevius, 4-lobum, apice mucronatum; lobis *inferioribus* minoribus falcato-recurvis, *superioribus* plusquam duplo majoribus, horizontaliter patentibus, lineari-oblongis, rectis, apice obtusis, bifidis; segmentis valde obtusis. *Calcar* e basi dilatata saccata longissime attenuatum, curvatum. *Germen* gracile, rectum, in petiolum vix angustiorem attenuatum. *Columna* brevis, antice utrinque superne dente ovato vel lobo dilatata. *Clinandrium* planum, antice 3-dentatum, in sinubus dentium, glandula (pollinis?) magna, cupuliformis, viridis, in caudam latam dense pilosam attenuata, subtus lamellifera. *Stigma* quadratum, depressum. *Anthera* subbiloba hemisphærica, antice bifida, unilocularis, primum membrana (demum erumpente) tecta. *Massæ pollinis* 2, obovato-subrotundæ, nigrescentes, semibilobæ.

Frequently in my endeavours to illustrate the *Orchideous* plants, I find myself obliged, however reluctantly, to differ from those eminent botanists who have made this tribe

their peculiar study. Such is particularly the case with the present individual, which, though characterized by the pen or pencil of a Thouars, a Lindley, and a Richard, yet presents some points of difference, enough to show, that, with the greatest care we can devote to the subject, something will escape our notice, or present itself in another light from that in which it has appeared to others. Du Petit Thouars, in the plates above referred to, has given a very satisfactory appearance of the plant of its natural size. But, in the dissections, he has represented the clinandrium as furnished with two little sacks or receptacles, in which not only the caudicula, but the proper gland of the pollen-masses, are inserted. Professor Lindley thus defines his genus *Cryptopus;* "*Labellum* membranaceum, horizontale, liberum. *Sepala* heteromorpha, lobata, unguiculata, explanata, basi distantia. *Pollinia* 2, integra; filis et glandulis propriis in bursis totidem clinandrii occultis !"—Professor Richard describes the pollen-masses of our plant as "*Pollinia* duo solida, globosa, basi subangustata et in membranulam bisrecurvatam, retinaculo ovali peltato, facie superiori pilis albis hyalinis brevibus tecta insidentem."

It must indeed be confessed, that the real structure of this part of the inflorescence is very difficult to be distinguished, and equally difficult to be described. I have examined numerous flowers (preserved in spirits) both before and after expansion, and I have endeavoured to represent faithfully what I have seen. In the state of the bud, I universally found the anther-cell to be closed by a membrane covering the two pollen-masses, as represented at *f.* 2. In a more advanced state of the flower, on raising the anther-case (as at *f.* 3.) the membrane within was found burst, and what I consider the large cup-shaped glands, with their curiously attenuated and pubescent base, were fixed by means of a thin plate (*f.* 6.) to the sinuses of the teeth in the clinandrium; yet so slight was the attachment of the pollen-masses to these glands, that they were, in almost every instance, carried away by the forcible removal of the anther-case.



Angraecum pectinatum.

W.J.H. del.

Swan Sc.

M. Richard includes in his genus *Beclardia* (our *Cryptopus*) the Epidendrum *macrostachys*, and E. *brachystachyon* of Thouars: but Mr. Lindley, I think, with more propriety, restricts it to our present species, which is a native, exclusively, of Mauritius and Bourbon, and parasitic on the trunks of trees.

TAB. CXV. Cryptopus elatus. *Fig.* 1, Flower, from which the sepals have been removed. *Fig.* 2, Column and anther. *Fig.* 3, Anther, separated from the clinandrium in a state of bud, showing the membrane which covers the pollen-masses in that state. *Fig.* 4, Anther of a fully expanded flower, forced back from the clinandrium, carrying the pollen-masses with it, and leaving the glands attached to the sinuses of the clinandrium. *Fig.* 5, The pollen-masses. *Fig.* 6, 6, Glands of the pollen. *Fig.* 7, Single gland, showing its mode of attachment to the clinandrium:—*magnified.*

ANGRÆCUM PECTINATUM;

caule repente, ramis adscendentibus foliosis, foliis numerosis lineari-oblongis distichis approximatis carnosis obtusis, floribus axillaribus solitariis subsessilibus, sepalis labelloque patentibus oblongis subæqualibus, cornu rectiusculo ovario breviore. (TAB. CXVI.

Angræcum pectinatum. *Thouars, Orchid. des Isles Austr. d' Afr. t.* 51. *Rich. Monogr. des Orchid. des Isles de Fr. et de Bourb. p.* 68. *t.* 10. *n.* 5.—Aerobion pectinatum. *Spreng. Syst. Veget. v.* 3. *p.* 717.

HAB. Mauritius and Bourbon.

Parasiticum. *Caulis* repens, radicans, gracilis. *Rami* adscendentes, digitales vel subspithamæi, e basi fere usque ad apicem foliosi, nonnunquam proliferi. *Folia* unciam vel sesquiunciam longa, disticha, approximata, patentia, lineari-oblonga, carnosa, crassa, obtusiuscula, facie anteriore sulcata, inferne vaginantia; *vagina* brevis, inflata, striata. *Flores* axillares, solitarii, subsessiles, ad basin bracteati; *bractea* acuminata, convoluta. *Sepala* subæqualia, oblonga, patentia, obtusa; 2 interiora paululum minora, striata; sextum

seu *labellum* reliquis sublongius, oblongo-acuminatum, patens, seu subreflexum, sub summa lente punctis minutis elevatis notatum, basi calcaratum; *cornu* rectiusculo pendente, subclavato, ovario breviore. *Columna* brevissima. *Clinandrium* planum, tridentatum, dente medio longiore. *Anthera* operculiformis. *Massæ pollinis* 2, obovatæ, subrotundæ, cereaceæ, semibilobæ, basi retinaculo membranaceo affixæ. *Ovarium* oblongo-clavatum, vix tortum.

I give the present and following species of this tribe as truly belonging to the genus *Angræcum*, upon the authority of Professor Lindley, who has done me the favour to examine and to name my entire collection of *Orchideæ*, in all cases where the smallest doubt or difficulty occurred with respect to their determination. A. *pectinatum* is probably not uncommon on the forest-trees of the Mauritius, creeping on their trunks.

TAB. CXVI. Angræcum pectinatum. *Fig.* 1, Leaf. *Fig.* 2, Side-view of a flower. *Fig.* 3, Front-view of a flower. *Fig.* 4, Labellum. *Fig.* 5, Portion of do. (highly *magnified.*) *Fig.* 6, Summit of the column, with the anther forced back:—all more or less *magnified.*

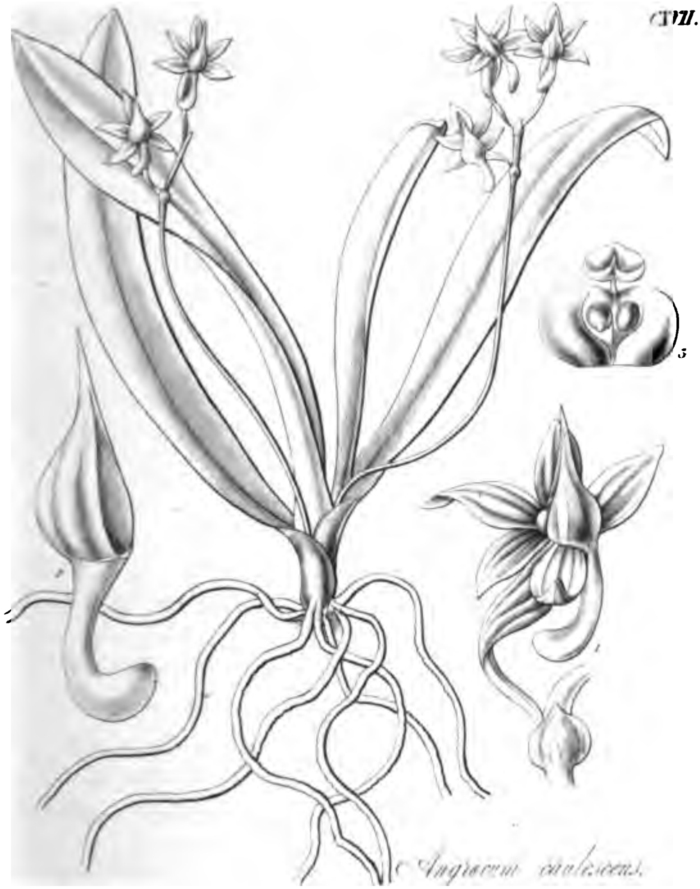
ANGRÆCUM CAULESCENS;

caule brevi, foliis paucis lato-linearibus distichis coriaceis, pedunculis elongatis paucifloris, sepalis oblongo-ovatis patentibus subæqualibus, labello cochleato acuminatissimo, cornu incurvato ovarium contortum subæquante. (TAB. CXVII.)

Angræcum caulescens. *Thouars, Orchid. des Isles Austr. d' Afr. t.* 75. *Rich. Monogr. des Orchid. des Isles de Fr. et de Bourb. p.* 73. *t.* 10. *n.* 3.—Aerobion pectinatum. *Spreng. Syst. Veget. v.* 3. *p.* 717.

Parasiticum. *Caulis* brevis, inferne radicans, superne foliosus. *Folia* pauca, disticha, 3–4 uncias longa, lato-linearia, obtusiuscula (nunc, fide *Thouarsii*, apice bifida), coriacea. *Pedunculi* axillares, longitudine foliorum, graciles, pauciflori. *Pedicelli* perbreves, bracteati; bracteis parvis, sub-

CVII.



Angraecum caulescens.

W. H. del.

Swan Sc.

NOTICE CONCERNING MR. DRUMMOND'S COLLECTIONS, MADE IN THE SOUTHERN AND WESTERN PARTS OF THE UNITED STATES.

Mr. Thomas Drummond has been long known as a most zealous and accurate Botanist, first, by his Muscological researches, and the publication of his *Musci Scotici*, whilst residing at the Nursery at Forfar, (which, as the residence also of his no less able predecessor, Mr. Don, may almost be considered by the student of the British Flora as classical ground); and, secondly, by his successful labours in North America, while engaged as assistant-naturalist to Dr. Richardson, in the Second Overland North American Expedition, under the command of Captain Sir John Franklin. His collections both in Zoology and Botany have been admired by all who have seen them, for the manner in which the specimens are preserved, as well as for the judgment with which they have been selected, and they reflect the highest credit on his zeal and assiduity.* It occurred to Dr. Graham and myself, that such a person could not be more usefully employed in the cause of science than by investigating some of the less known parts of the *Southern* and *Western United States* of North America, and, if practicable, in visiting those interesting and hitherto unexplored and mountainous regions of Mexico and California bordering upon the United States. The necessary funds for the outfit were, by the liberality of our natural history friends, soon raised, and a considerable interest was manifested in the success of the expedition. The route proposed was to proceed from New York, early in the season, to cross the Alleghanies, and journey on to St. Louis on the Missouri, which place Mr. Drummond was to make his head-quarters for as long a time as he might feel necessary, and there derive information respecting the practicability of entering California or Mexico from that point: and, should circumstances not be favourable for that undertaking, to descend the Missisippi to New Orleans in the autumn, thence to transmit his collections to England, to form new ones, explore the country in that latitude to the westward, as much as possible; and, eventually, endeavour to reach the Mexican dominions near their northern boundary. For the successful issue of this plan, something more was necessary than mere pecuniary assistance, and I am anxious publicly to acknowledge the services rendered on this occasion by several gentlemen, who, though not all of them professedly naturalists, have thus shown their willingness to promote science. Dr. Boott procured a powerful letter of introduction to Mr. Aster, the head of the United States Fur Company, whose influence extends from the Missisippi to the Pacific Ocean; Nicholas Garray, Esq., Deputy-Governor of the Hudson's Bay Company in London, most generously provided, in the name of that Company, a passport, which would command every thing necessary for the furtherance of Mr. Drummond's object, in case he should find it desirable to enter their extensive possessions from any portion of the United States. Charles Barclay, Esq., of Bury Hill, Surry, favoured him with a letter to Viscount Rochefurche and to Messrs. Manning & Co. of Mexico. Joshua Bates, Esq., and Messrs. Baring, Brothers, & Co., London; John Thornton, Esq., Liverpool; J. M'Goun, Jun., Esq., of Greenock; John Dennistoun, Esq., of the House of A. & J. Dennistoun of Glasgow, have recommended him to their correspondents in different parts of the Southern United States. To this latter gentleman, in particular, I feel personally indebted for services rendered in various ways, especially through the medium of his house in New Orleans, and he has, as well as my valued friend and former pupil, Wm. Mylne, Esq., of the same firm, afforded valuable aid, which Mr. Drummond has not failed to acknowledge in almost every letter I have received from him. Dr. Graham, Dr. Richardson, G. A. W. Arnott, Esq., William Christy, Esq., Chas. Parker, Esq., James Smith of Jordanhill, Esq., George Bentham, Esq., P. Neill, Esq., Messrs. Lawson and Cunningham, Nurserymen, Edinburgh, H. C. Watson, Esq., Charles Lyall of Kinnordy, Esq., Professor Lindley, Henry Sandbach, Esq. of Liverpool, Professor Henslow, Dr. Greville, J. G. Children, Esq., of the British Museum, The Directors of the Manchester Botanical and Horticultural Institution, those of Glasgow, R. J. Shuttleworth, Esq., J. T. Mackay, Esq., B. D. Greene, Esq., and Dr. Greene of Boston, U. S. A., Mr. Stephen Endlicher of Vienna, have each contributed, pecuniarly or otherwise, towards the success of this enterprize, and they have the satisfaction of knowing that the amount and value of Mr. Drummond's collections have already exceeded their expectations; and should life and health be granted him, there is every prospect of his mission being attended with greater and more important results. Of what has been hitherto done, and what it is in contemplation to do, I shall now proceed to give some account; and this I cannot convey better than in extracts from Mr. Drummond's letters to me, consequently in his own words.

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* A brief account of Mr. Drummond's Expedition to the Rocky Mountains, and to the source of the Columbia, is given by himself in the first volume of the former series of this *Miscellany*, p. 178.

The first letter was dated New York, 28th April, 1831, and was written under an impression that Santa Fé in North Mexico might have been reached during that season.—"I arrived here," he says, "on the 25th instant, after an excellent passage from Liverpool, and immediately delivered your letters of introduction to Drs. Torrey and Hosack, and I found them much disposed to render me all the assistance in their power, especially by offering me letters to several Naturalists whom I am likely to fall in with on my journey. The English Consul has furnished me with an introduction to the British Minister at Washington, that I may procure recommendations to the military establishment on the Missouri, &c., and I understand there are letters forwarded to New Orleans from Mr. Aster, one of the principals of the American Fur Traders, so that I am likely to meet with little difficulty in prosecuting my journey to Santa Fé at the proper season. I spent several hours yesterday in looking over a collection of *Mosses* from the States, and was glad to observe a considerable number of species amongst them that were not found in the Northern Expedition (Franklin's); so that I anticipate making considerable additions to that department. Vegetation is not yet sufficiently advanced to induce me to make any delay, and I therefore intend setting off to-morrow for Philadelphia. The *trees* are just beginning to put forth their leaves, such as *Poplars* and *Willows*, and they, and the earlier kinds of fruit-trees, are in full bloom. Dr. Torrey is much pleased with the set of N. American *Mosses* * you sent, especially as he is at present preparing a list of those species that are known to exist throughout America; but he will write to you more particularly himself, as he intends sending you a parcel by the same ship that takes this. I expect to reach St. Louis by the end of May, whence I trust to be able to inform you of some success in collecting. I am in excellent health, which I hope will continue, and enable me to fulfil the expectations of those friends who have so kindly assisted me in the present undertaking."

The next letter bears date, "Philadelphia, 7th May, 1831," when he states that, "Having been delayed here for several days, with a view of procuring introductory letters to the interior, I have made a short excursion to the woody country, and as an opportunity serves of forwarding a parcel, free of expense, I have put up such plants as I observed in flower. There is, indeed, nothing interesting† among them, but they may serve as a *memento* of my having been at Philadelphia. I have met with several *Mosses* which I did not find in my former journeyings in the more northern latitudes, in sufficient quantity for publication: such as *Leucodon, sp.? Gymnostomum pyriforme, Diphyscium foliosum, Buxbaumia aphylla,* several *Phasca, Polytrichum tenue, Tortula, sp., Didymodon pallidus, Grimmia,* allied to *pulvinata,* and another resembling *Glyphomitrion Daviesii, Pterogonium, two species,* and a *Hypnum, n. sp.,* &c. I have visited several of the museums here, and observed a great many interesting objects which I hope to find myself. Amongst them I have examined the collection of *Mosses* of the celebrated Muhlenberg.* The specimens are miserable, but still sufficient to enable me to assure myself that there are many I have not yet met with. I have been to see the garden that once was Bartram's, and found that it was still kept up as a nursery by Colonel Case, and that it retained some very fine specimens of trees. The season, however, is said to be unusually backward, but I find it quite warm enough for my pursuits. The early *Peas* are just coming into blossom, and the *Potatoes* appearing above ground. The only vegetables of this season's growth in the market are *Asparagus* and *Radishes.* In the woods are a good many species of *Viola,* and in one day's walk I have observed, in flower, *V. pedata, V. palmata, V. cucullata, V. debilis, V. ovata, V. lanceolata,* and one or two others with which I am not so well acquainted. I shall proceed immediately to Baltimore and Washington, where I find it will be necessary to go, in order to procure letters from the Government to the military posts on the Missouri, &c.; thence

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* "*Musci Americani*, or dried specimens collected in British North America, and chiefly among the Rocky Mountains during the Second Land Arctic Expedition, under the command of Captain Sir John Franklin, R. N., by Thomas Drummond, Assistant-Naturalist to the Expedition." In 2 volumes, quarto.

† It is but justice to this most disinterested man to observe, that he invariably speaks of his collections as of less value than they really prove to possess. In regard to the parcel in question, it contained, independently

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of some very rare and some new *Mosses,* an excellent set of the spring plants of Pennsylvania, especially of the *Vaccinium* tribe, *Gonolobus obliquus,* Br. &c. and the little known *Floerkia,* of which genus an account is given at page 1. of the present vol., from the pen of Professor Lindley.

* The late *Rev. Dr. Muhlenberg* of Pennsylvania, who supplied the celebrated Hedwig with almost all the United States *Mosses* which appeared in his "*Stirpes,*" and in the "*Species Muscorum*" of the younger Hedwig.

to Wheeling, walking across the Alleghanies, where I expect the forest-trees will be in a good state for preserving. I have now divested myself of all my luggage, except what is absolutely necessary, and still it amounts to a considerable weight; and I am provided with various letters from scientific men, and with maps of all the country I am likely to visit, as far as Santa Fé; but I find the purchase of them very expensive."

Thus far all was well; but the next communication was from St. Louis, dated July 19, 1831, written under considerable depression of spirits, in consequence of severe indisposition. Fearing lest that letter might not reach me, Mr. Drummond recapitulated nearly the whole * of the information in his next letter, dated New Orleans, December 6, 1831, to extracts from which I shall now confine myself. "I wrote to you," he says, "immediately after reaching St. Louis, and sent the letter by a private hand to Europe; but as I am uncertain whether you have received it, I shall briefly notice the particulars of my journey. I commenced walking, to cross the Alleghanies, at Fredemickstown, accompanying a waggon which carried my luggage: and although it did not exceed 25 miles per day, I found very little spare time to make excursions from the road, constantly sleeping, as I was obliged to do, where the waggon put up, in order to have the opportunity of shifting the specimens I had collected during the day. These were, indeed, very few in number, and I was grievously disappointed with these mountains, which ought rather to be considered as mere *ridges*. It is true that they *would* afford a considerable number of species of the Timber-trees, provided the season was favourable; but I was a month too early; for although many of the trees were bursting into foliage, the specimens were too young for preservation, so that they turned black in drying;—and upon the highest ridge, "Laurel Hill," every thing had the appearance of winter. Nor did I add any thing to my collection of *Mosses;* the bark of the dry stunted *Oaks* proving very unfavourable to their growth, and time not permitting me to penetrate into the sheltered ravines. On arriving at Wheeling, on the Ohio, seventeen days after starting (from Frederickstown), I ascertained that the heavy part of my luggage, which I had forwarded from Philadelphia, had not arrived, and I was consequently detained a week there. It had been my intention to descend the Ohio in a small boat; but since steam-navigation has become so common, it is difficult to procure one that would answer the purpose. I had, therefore, no alternative but to take the steam-boat to Louisville; on reaching which place, symptoms of fever began to appear, the weather being extremely warm, and on the third day after my arrival, I was laid up for ten days. Recovering a little, I reached St. Louis in four or five days, without much alteration in my health; but immediately on arriving at that place, I had a relapse of the fever, with confirmed ague, and had immediately recourse to medical advice, but without deriving any advantage. Thus I lost a considerable number of specimens, which were then in flower, partly from inability to undergo any fatigue in collecting, and partly from the destruction of those which were previously collected; but to the drying of which I was totally unable to attend. In a little more than a fortnight, I got somewhat better, so that I could walk out; but was again laid up with fever, accompanied by severe diarrhœa, which reduced me to so weak a state, that I was unable to leave my bed, being little else but skin and bone. However, I gradually recovered strength enough to make at length short excursions, although I found myself frequently obliged to rest half-a-dozen times in the brief space of a mile. I now began to collect with all the energy I had left, and I flatter myself that my collection will yet be such as to give a tolerable idea of the general nature of the vegetation round St. Louis. I was greatly disappointed that my paper from England did not come while I was at that place. It did, however, arrive soon after, having been kindly forwarded from New Orleans by Messrs. Dennistoun. I was, therefore, under the necessity of purchasing paper at a very high price, and pasteboard was still more difficult to be procured.

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* The St. Louis letter indeed mentions, that at Washington the British Chargé d'Affaires furnished him with a letter from the American Government, that was of the highest importance, as it contained an order to all the officers of the military posts on the Missouri to render him every assistance in their power: and that he had the good fortune to meet at Frederickstown with B. D. Greene, Esq., of Boston, one of the ablest botanists of the United States, and who was then on an excursion in pursuit of his favourite plants to Harper's Ferry.

"Unfortunately, owing to the lateness of my arrival at St. Louis, it was impossible for me to proceed up the Missouri, the Fur traders, whom I wished to have accompanied, generally leaving their head-quarters on the first of May, or even sooner. I delivered my letters of introduction, however, and received most liberal offers of assistance, with a view to forward my objects. There are here two companies; 1st, *The American Fur Company*, of which Mr. Chiato is the acting agent. They generally go out by the route of Santa Fé, assembling at a small village about a hundred miles from that place, called Toas, from whence they proceed to the mountains. The 2d company was under the direction of General Ashley, and he still retains a considerable interest in it. Their hunting-ground is near the source of the Missouri. In short, there will be no difficulty in getting to the mountains. —I do not consider the amount of species I have yet collected can exceed 500. They, and the other objects of Natural History, shall be despatched by the first vessel that goes direct to the Clyde. My health is now tolerable, and I trust I may consider myself acclimated."

This letter was soon followed by the arrival of a collection of roots, chiefly from St. Louis, *viâ* Liverpool, with a letter dated New Orleans, December 14, 1831, in which, speaking of its contents, he says, "Among them you will find a gigantic *Grass*, which I hope may arrive alive. I should never have considered it to be a *Grass*, had I not seen the flowers, for it has much of the habit of the *New Zealand Flax*, but the leaves are longer and narrower. It is No. 27 of the

Catalogue. There is another plant, too, that I am much interested about, (my No. 7,) and it is probably the *Silphium gummiferum* of Elliott, (undoubtedly, and a most stately plant of its Order. *H.*) No. 54 is a singular water-plant, floating on the surface, after the manner of *Lemna*, but I do not know to what Order it belongs; (this was the curious *Azolla Caroliniana.*)—In the box you will find a basket containing some *Shells*,* but they are not arranged, and are merely as I collected them, after having removed the inhabitants. I intended to have sent the *Seeds* which I have gathered with this parcel; but, upon consideration, I shall defer them till the next opportunity, as the damp arising from the living plants might injure them. I have between two or three hundred kinds, such as they are. Indeed I consider myself unfortunate in the route I have pursued; there being very little variation in the plants of the Mississippi about St. Louis, from those of the more northern territories. I flattered myself all along, that, when I reached that place, I should be in the Prairie country; but there is nothing of the kind: the woods consisting of stunted *Oak*, with very few other timber-trees. On the Illinois side of the river is something like a Prairie, which is called the "American Bottom." The *Silphium* (*gummiferum*) formerly mentioned, was the most interesting plant I found there: but the country is so unhealthy, that there are few settlers in it, although it is of great extent, and the richest land I have seen. Fever and ague are universal about St. Louis, not one out of fifty escaping, either among natives or strangers. The first appearance of a change of vegetation, at least in the forest-trees, takes place about the mouths of the Ohio; *Cupressus* (*Taxodium*, Rich.) *disticha* here making its first appearance; and, as you descend the river, this tree becomes covered with

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* This, and those afterwards sent from New Orleans, proved to be a tolerably extensive and very interesting collection of land and fresh-water shells of the more Southern States, of which a complete set is preserved in the Andersonian Museum in Glasgow.

Tillandsia usneoides, and the American *Misseltoe* (*Viscum flavescens*, Pursh.) In travelling, however, by the steam-boats, you have very few opportunities for collecting. The only time is when they stop to take in wood, which, being usually kept in flat boats in readiness, is very short indeed. The country around New Orleans is swampy, and at the present season of the year entirely covered with water."......... "You will be much surprised, when you receive the specimens, to find almost a total absence of *Ferns* and *Orchideous* plants. The most abundant genus is *Verbena*, and I believe there may be some species not described by Pursh."

On the 18th May, 1832, three chests arrived in excellent condition. Their contents are best described by Mr. Drummond himself, in his letter dated New Orleans, January 3d, 1832. "No. 1 contains an assorted and complete collection of nearly 700 species, (exclusive of *Cryptogamiæ*): the specimens are numbered, and I keep a list under such names as I can again recognize them by; so that I can at once give any information about any species that may be required. It had been my intention to number all the specimens in the various collections; but this I must, although unwillingly, decline, as it occupies more time than I can spare from more important avocations. The same box likewise contains a large quantity of duplicates. In box No. 2, will be found several sets for those friends who were so kind as to assist in my outfit, with collections of *Seeds* and several species of *Acorns* and *Pine-cones*, which should be distributed with the respective specimens; and Reptiles in spirits for Dr. Scouler. No. 3 contains the *Mosses* and *Hepaticæ*,* gathered during the journey, two boxes of *Shells*, a box of *Coleopterous Insects* for J. G. Children, Esq., of the

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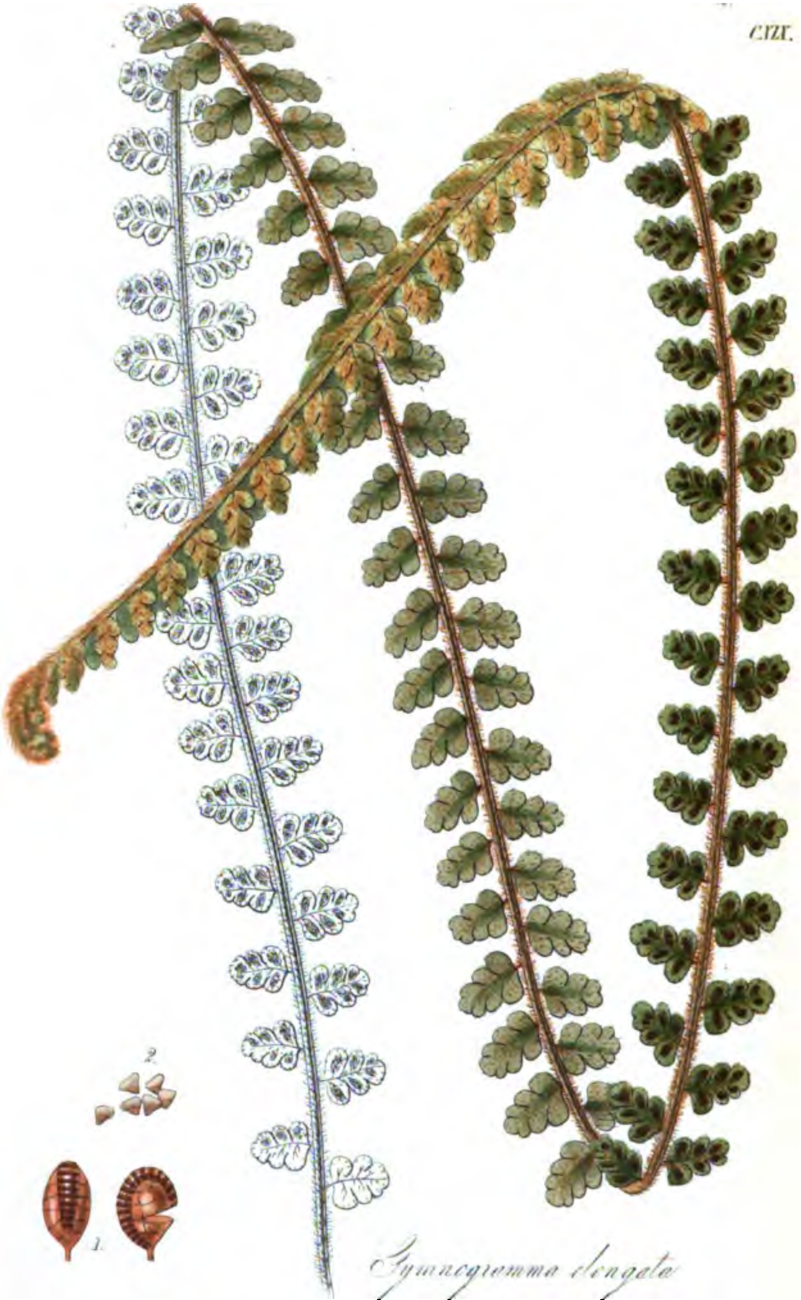
* A very extensive and valuable collection. The *Mosses* are (which indeed may be said of nearly the whole of the collections) *beautifully* preserved. Among the *Hepaticæ* is an apparently new genus, and copious specimens of *Riccia natans* in *fruit*, in which state it has only been known in North America. See *Botanical Miscellany*, 1st Series, vol. 1. p. 41. t. 22.

British Museum, and collections of *Seeds* for Mr. Murray, &c. ...."

During the spring and summer, Mr. Drummond explored the neighbourhood of New Orleans, with his accustomed zeal, and thrice visited the opposite shore of the Lake Pontchartraine; and during these excursions formed another ample collection of nearly 300 species of plants (exclusive of *Cryptogamiæ*), and many *Insects* and *Shells*, which were received in Glasgow in two very large chests, in August of the present year, (1832.) These will be distributed to the respective subscribers as soon as uniform numbers can be put to all the species, such as accompanied the South American collections of Mr. Cuming. It will be my object, in an early No. of the *Miscellany*, to give a list of names, corresponding with those Nos.; by which means the value of the species will be considerably increased to the subscribers.

By the last accounts which were received from Mr. Drummond, we learn that it was his intention to set out for Natchatoches on the Red River, whence he hoped to despatch a collection, *viâ* New Orleans, and proceed to Texas; but his exact route, or the length of his visit there, must depend upon a variety of circumstances, and upon the success attending the disposal of his collections in Europe. It is the expense alone attending the transport of his baggage in so unfrequented a country, that has prevented this enthusiastic traveller from being already among the mountains of Mexico. That he will soon be able to accomplish this desirable object I cannot allow myself to doubt, when I witness the almost daily increasing interest that is expressed for his success in a country hitherto untrodden by the foot of any Naturalist.—(W. J. H.)

CXIX.



Gymnogramma elongata

Dr. Greville del.t Swan Sc.

[TAB. CXIX. CXX.]

DESCRIPTIONS OF TWO NEW SPECIES OF GYMNOGRAMMA FROM PERU.

BY DR. GREVILLE AND DR. HOOKER.

GYMNOGRAMMA ELONGATA;

Fronde lineari-elongata hirsutissima pinnata, pinnis cordato-ovatis brevissime petiolatis pinnato-lobatis lobis rotundatis obtusis crenatis. (TAB. CXIX.)

Stipes, in examplaribus nostris, brevis, vix 2 uncias longus, hirsutus, fuscus, nitidus. *Frons* pedalis et ultra, lineari-elongata, vix unciam lata, pinnata; pinnis remotiusculis, brevi-petiolatis, cordato-ovatis, obtusis, patentibus, utrinque pilis longiusculis, flexuosis, sericeo-fuscescentibus tectis, pinnato-lobatis; lobis 5-7, rotundatis, obtusis, minute crenatis, junioribus villosissimis. *Sori* in omnibus fere pinnis, et in singulo lobo solitarii, lineares, nudi. *Capsulæ* ovali-globosæ, subcompressæ, fuscæ, annulo lato fere completo præditæ, stipite perbrevi suffultæ. *Semina* triangularia, pellucida.

HAB. At "Surucucho," near Cuenca, on the road to Naransal, in the mountains of Peru, at an elevation of 9000 feet above the level of the sea, *Professor W. Jameson.*

In its copious pubescence, this species approaches the New Holland *Gymnogramma rutæfolia*, and G. *pseudo-glandulosa*, (*Icones Filicum, tab.* 90 *et* 91.); but in that particular alone; for in size, and other characters, they are abundantly different.

TAB. CXIX. Gymnogramma elongata. *Fig.* 1, Capsules. *Fig.* 2, Seeds:—*magnified.*

GYMNOGRAMMA FLABELLATA;

Fronde oblongo-lanceolata bi-inferne tripinnata hirsuta, pinnulis brevi-petiolatis flabelliformibus dichotome divisis segmentis obtusis emarginatis, rachibus partialibus viridi-marginatis, soris confluentibus dichotomis. (TAB. CXX.)

Stipes brevis (?), purpureo-fuscus, nitidus, hirsutus. *Frons* pedalis, circumscriptione oblongo-lanceolata, bipinnata. *Pinnæ primariæ* lanceolatæ seu lineari-lanceolatæ, 2–3 uncias longæ, subacuminatæ; *secundariæ* seu *pinnulæ* brevipetiolatæ, flabelliformes, dichotome divisæ, hirsutæ, virides; segmentis oblongis brevibus, plerumque emarginatis. *Rachis primaria* subflexuosa, purpureo-fusca, nitida, pilosa, teres, hinc sulcata; *partialis* etiam valde pilosa, viridi-marginata. *Sori* lineares, confluentes, in costam siti, dichotomi. *Capsulæ* pallide flavescentes, annulo fere completo cinctæ, brevissime stipitatæ. *Semina* globosa, subangulata.

HAB. In the same situation with the preceding. It grows up from the ground amongst herbage, *Professor W. Jameson.*

This beautiful *Fern* (quite distinct from any known *Gymnogramma* which we have ever seen), is described as " growing up from the ground amongst herbage," and the entire plant may possibly be of large size, and much more divided than our specimen will give an idea of. It was discovered along with the preceding at Surucucho, near Cuenca, growing at an elevation of 9000 feet above the level of the sea.

TAB. CXX. Gymnogramma flabellata. *Fig.* 1, Capsules. *Fig.* 2, Seeds:—*magnified.*

ILLUSTRATIONS OF INDIAN BOTANY;

PRINCIPALLY OF THE SOUTHERN PARTS OF THE PENINSULA.

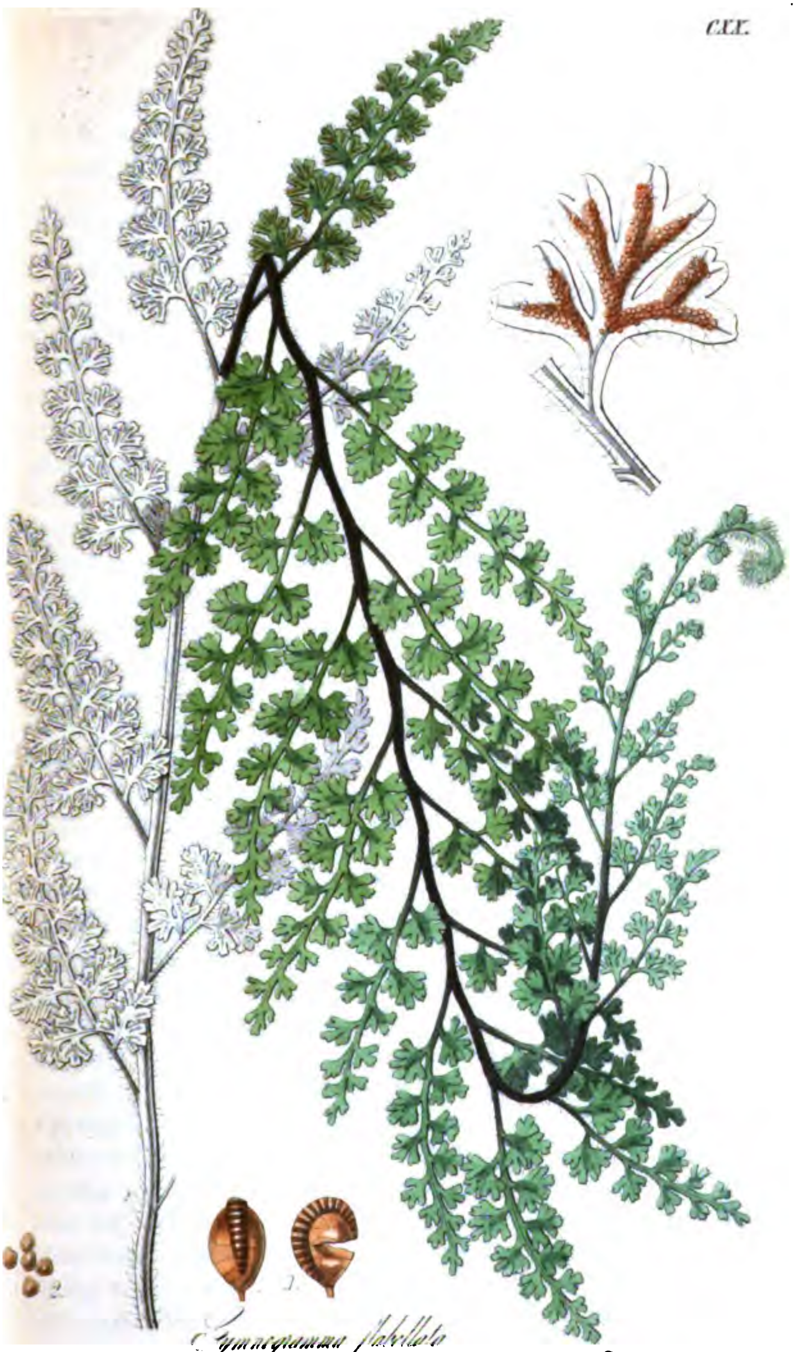
By ROBERT WIGHT, M.D., &c. &c.

[Continued from p. 302 of the 3d volume of the 1st Series of the Botanical Miscellany.]

[TAB. CXXI.]

TROPHIS ASPERA;

Inermis, foliis obovato-oblongis acutis inæqualiter serratis utrinque scabris, floribus masculinis capitatis, fœmineis subsolitariis.



Gymnogramma flabellata

D^r Greville del^t

Trophis *aspera*. *Retz, Obs.* 5. *p.* 30. *Willd. Sp. Pl. v.* 4. *p.* 734. *Spreng. Syst. v.* 3. *p.* 902.

Poora-marum. *Tamul.*

A rigid milky *Tree*, with smooth cinereous *bark*, and numerous interwoven, hispid, sparingly milky *branchlets*. *Leaves* alternate, somewhat bifarious, rigid, subsessile, varying from orbicular to obovate, or rhomboid and acuminate, obtuse or slightly cordate, entire at the base, from about the middle upwards irregularly serrated, or rather, perhaps, crenated, very rough on both sides, bright shining green above, whitish beneath. *Male peduncles* axillary, aggregate, short, bearing six or eight *flowers* collected into a head. *Calyx* none (?). *Corolla* 4-parted, divisions hairy, much shorter than the stamens. *Filaments* four, compressed, jointed, elastic, opening with a sudden jerk, and scattering, at the same moment, a cloud of *pollen*. *Anthers* 2-celled, large in proportion to the rest of the flower. *Female flowers* always found on the same tree with the male, and not unfrequently, as in the specimen figured, on the same branchlet, though more often on distinct branches, particularly on young plants. *Peduncles* axillary, solitary, or in pairs, about half-an-inch long, bearing a small *bractea*, close under the flower. *Floral covering*, or *Calyx* (?) of six leaves, imbricated 2 and 2 in a treble series, the largest pair being within. *Styles* 2, very long. *Pericarp* an orange-coloured, smooth, compressed, emarginate *berry*, containing one globular *seed*.

The characters of this plant do not correspond very satisfactorily with those of the genus *Trophis*, though these are modified (apparently for the purpose of bringing it in) by Sprengel. The characters of the *T. spinosa*, unless I have mistaken the plant, are still more at variance with *Trophis*, as it has a compound *berry*, and, when in flower, its germen is as thickly covered with long villous stigmas as the young fruit of the *Mulberry*. The male flowers agree with those of *T. aspera*, in being capitate, and having elastic stamens. It is diœcious; the male plant much rarer than the female. The *T. aspera* is much used in this country as a fence, for which it is well fitted, by its very ramous rigid character. Detached plants form low trees, with bushy heads.

TAB. CXXI. *Fig.* 1, 1, Male flowers. *Fig.* 2, Stamen. *Fig.* 3, Female flower. *Fig.* 4, Transverse section of the advanced germen. *Fig.* 5, Vertical section of a fruit. *Fig.* 6, Seed:—more or less *magnified.*

[TAB. CXXII.]

ATALANTIA RACEMOSA;

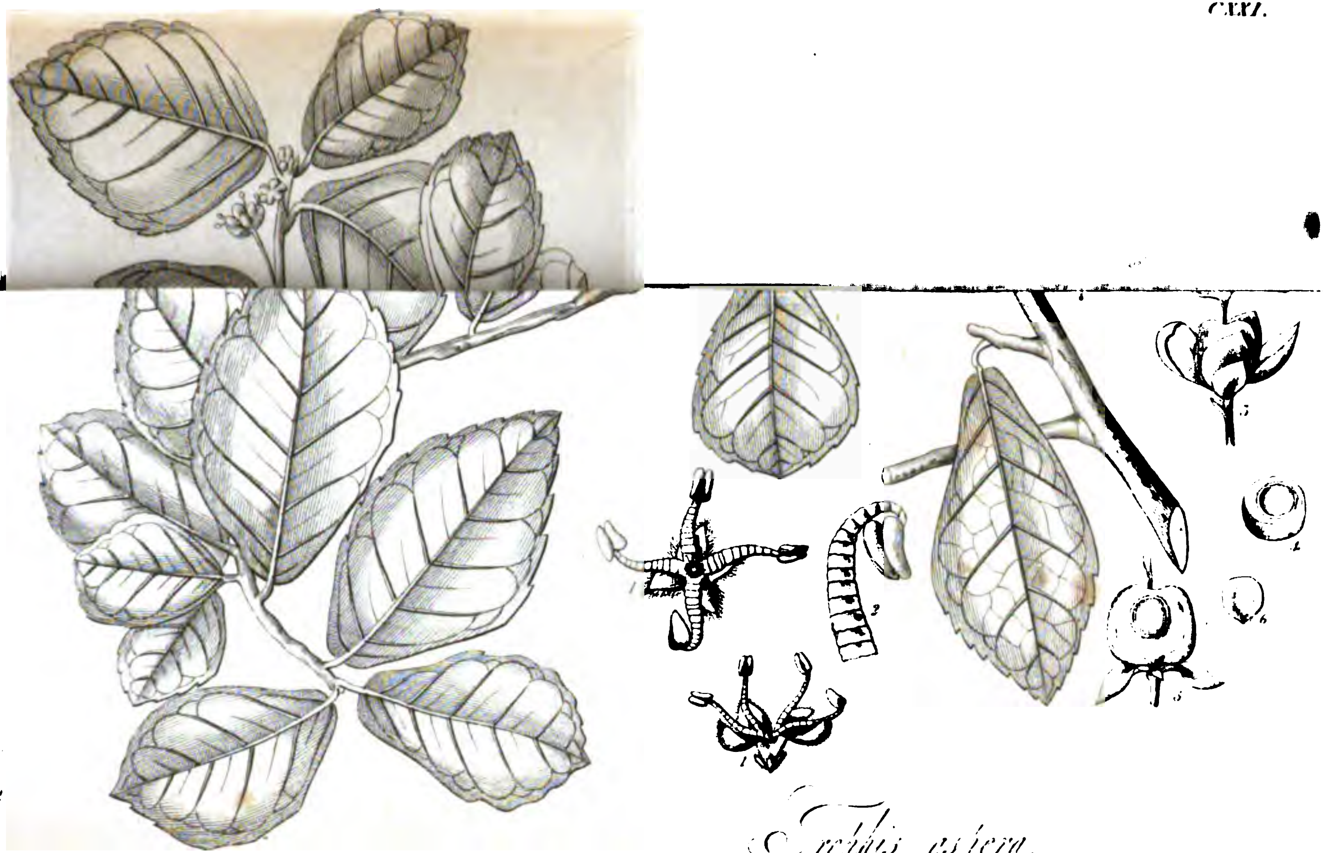
Racemis axillaribus, floribus, subsessilibus, stigmate capitato. (TAB. CXXII.)

Kaat Yellemuhie (Wild Lime). *Tamul.*

A ramous *shrub* or small *tree;* the extreme *branches* smooth, green, somewhat flexuose. *Leaves* springing from the flexures, shortly petiolated, broad, ovato-elliptical, obtuse, emarginate, otherwise entire, coriaceous, smooth, perforated with pellucid points. *Spines* axillary, subulate, from one-half to an inch long, perhaps much longer on the large branches. *Racemes* also axillary, springing from the side of the spine, usually shorter than the leaves, closely covered with rather large white *flowers. Calyx* 4-cleft, segments acute, smooth. *Corolla* 4-petaled, reflexed; *petals* linear-obtuse. *Stamens* eight; *filaments* united to the apex into a nectary-like cup. *Anthers* sessile, round, 2-celled, alternately larger. *Pistil: ovary* superior, 3- or 4-celled; *cells* containing several *ovules. Style* shorter than the stamens. *Stigma* capitate, 3- or 4-lobed. *Fruit* I have not seen.

This is another new species, selected from my Madura collection. It was gathered in that alpine country in February, 1830. Its having been so long overlooked, is perhaps owing to its general similarity to the *A. monophylla;* a closer examination, however, shows them to be quite distinct species. This differs from the *A. monophylla,* in having racemed, but *nearly* sessile, hence almost spiked, flowers, in the filaments being united to the very apex, not "*apice liberis,*" and in

CXXI.

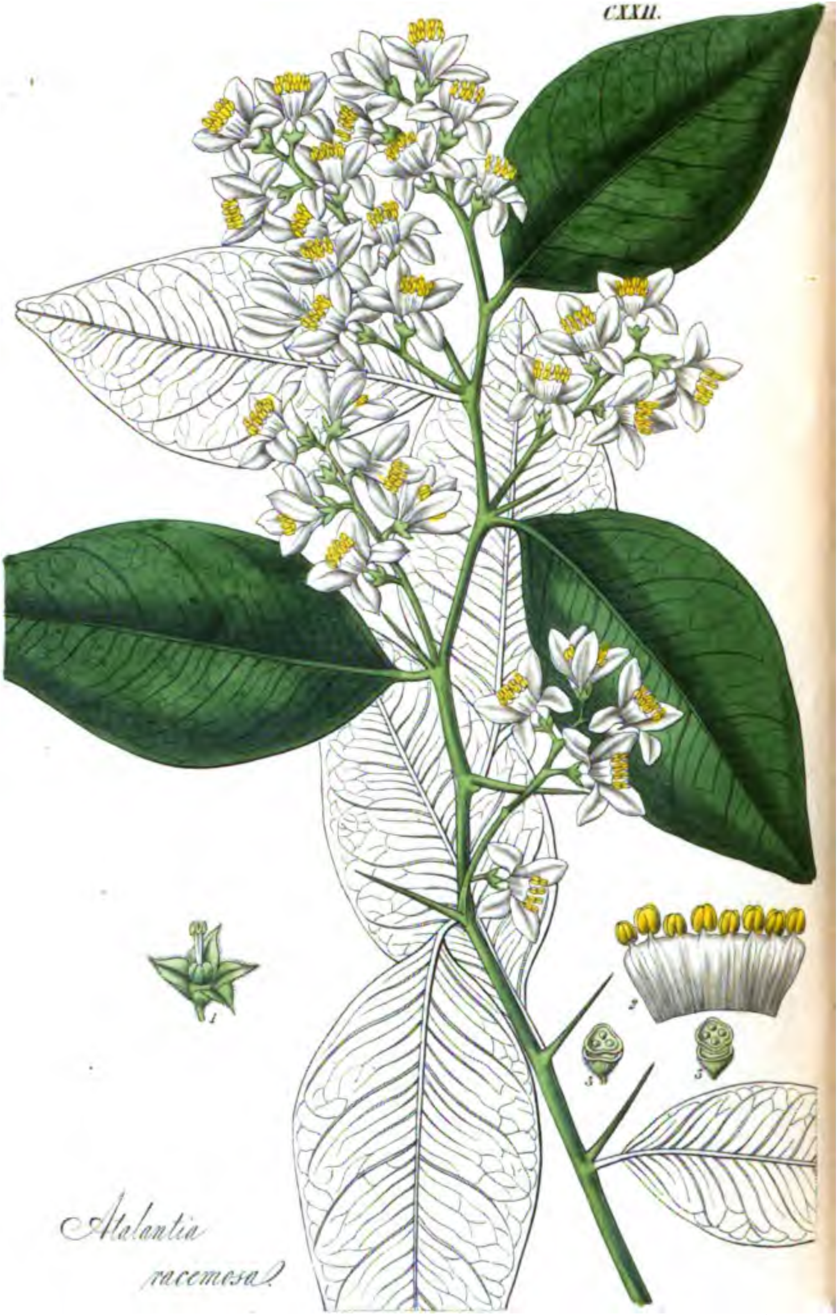


Trophis aspera.

W J H del.

Swan sc.

CXXII.



Atalantia racemosa.

V. J. W. delt [illegible]

having the stigma capitate; not forked, as in *A. monophylla* figured by Roxburgh. Hence these two species may be thus distinguished.—*A. monophylla;* floribus axillaribus aggregatis longe pedicellatis, stigmatibus bifidis:—*A. racemosa;* racemis axillaribus, floribus subsessilibus, stigmatibus capitatis.

TAB. CXXII. Atalantia racemosa. *Fig.* 1, Calyx, including the pistil. *Fig.* 2, United stamens. *Fig.* 3, 3, Sections of the germen:—more or less *magnified.*

[TAB. CXXIII.]

VILLARSIA CRISTATA;

Foliis natantibus cordatis undulatis, petiolis florigeris, pedunculis aggregatis unifloris, corollæ segmentis medio cristatis marginibus crispatis, staminibus 5 alternis sterilibus, seminibus subcompressis scabris. (TAB. CXXIII.)

Villarsia *cristata. Spreng. Syst. Veget. v.* 1. *p.* 582.

Menyanthes *cristata. Roxb. Corom. v.* 3. *t.* 105. *Fl. Ind. v.* 2. *p.* 29. *Roem. et Schult. Syst. Veget. v.* 4. *p.* 177.

Ullie. *Tamul.*

Aquatic. *Roots* fibrous, white, some from the base of the plant, and others from the extremity of the petiole, below the floating leaves. *Leaves* petioled, orbicular, cordato-peltate, margins entire or waved. *Petioles* radical, rounded, smooth, often very long; near their upper extremity frequently furnished with a large tubercle, from which appear numerous filiform peduncles and roots, and finally new plants. *Peduncles* fascicled, single-flowered. *Calyx* 5-leaved; *leaflets* lanceolate. *Corolla* rotate; its *limb* 5-cleft, the divisions obovate, obtuse, slightly crisped on the margin, and crested down the middle. *Crest* undulated, terminating below in 5 hairy sterile *stamens. Tube* short, yellow, hairy round the mouth. Perfect *Stamens* 5: *filaments* short, inserted near the apex of the tube, slightly incurved. *Anther* 2-celled. *Pistil*: *Germen* superior, inflated, ovate. *Style* short, thick, terminated by a large 2-

lobed *stigma.* *Capsule* evalvular. *Seeds* lenticular, rough, brown, attached to the base of the capsules.

A frequent species in tanks and pools of fresh water, flowering in the wet and cold seasons.

TAB. CXXIII. Villarsia cristata. *Fig.* 1, Flower, laid open. *Fig.* 2, Pistil. *Fig.* 3, Capsule, cut open:—slightly *magnified.*

[TAB. CXXIV.]

EUGENIA ROXBURGHII;

Pedicellis unifloris axillaribus lateralibus aggregatis aut subracemulosis folio multo brevioribus sub flore bibracteolatis, foliis ovalibus subobtusis coriaceis impunctatis glabris, calycibus pedicellisque ferrugineo-pubescentibus. DC. (TAB. CXXIV.)

Eugenia *Roxburghii. De Cand. Prodr. v.* 3. *p.* 271. *Wall. Cat. n.* 3621.

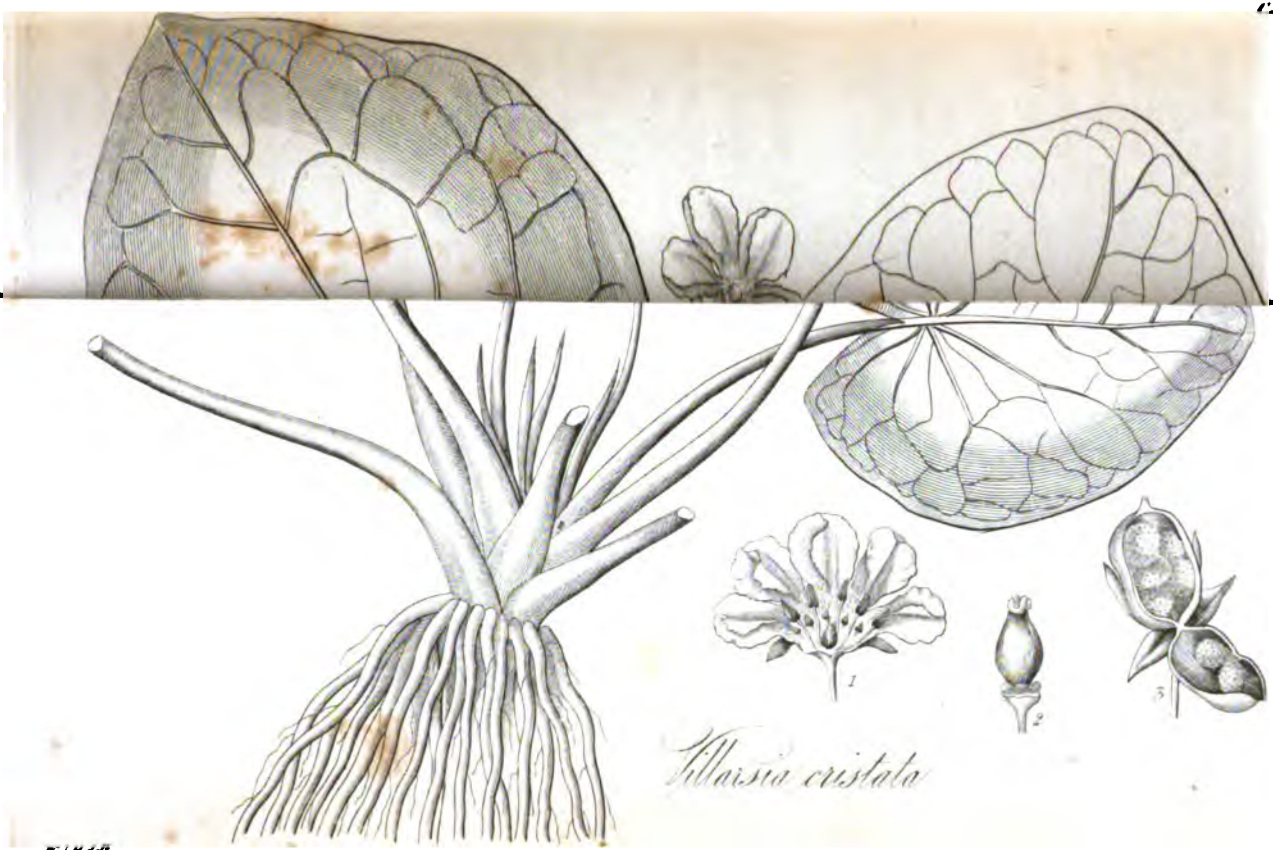
E. *bracteata. De Cand. Prodr. v.* 2. *p.* 264.

Myrtus *bracteata. Willd. Sp. Pl. v.* 2. *p.* 969.

Panah, *Tamul.*

A ramous, low-growing *shrub;* lower *branches* round, rough, cinerous, brown above, a little cracked, the extreme *shoots* and young foliage thickly clothed with rusty-coloured silky down; *leaves* opposite, shortly petioled, elliptical, obtusely acuminate, emarginate, entire, smooth, coriaceous, bright shining green, and perforated with very small and numerous pellucid points. *Flowers* pedicelled, axillary, white; *pedicels* solitary, about the length of the petiole, sometimes 2-flowered. *Bracteas* two, very small, villous, near the top of the pedicel. *Calyx* tubular, enclosing the germen, tubular portion globular; *limb* cleft down to the germen, segments unequal, obtuse. *Corolla: Petals* four, between obovate and orbicular, early deciduous, white. *Stamens* numerous, free, attached to a circular disk at the bottom of the limb of the calyx. *Pistil: Germen* inferior, round, 2-celled; cells containing several *ovules,* all but one of which shortly disappear. *Style* of the same length as

CXVIII.

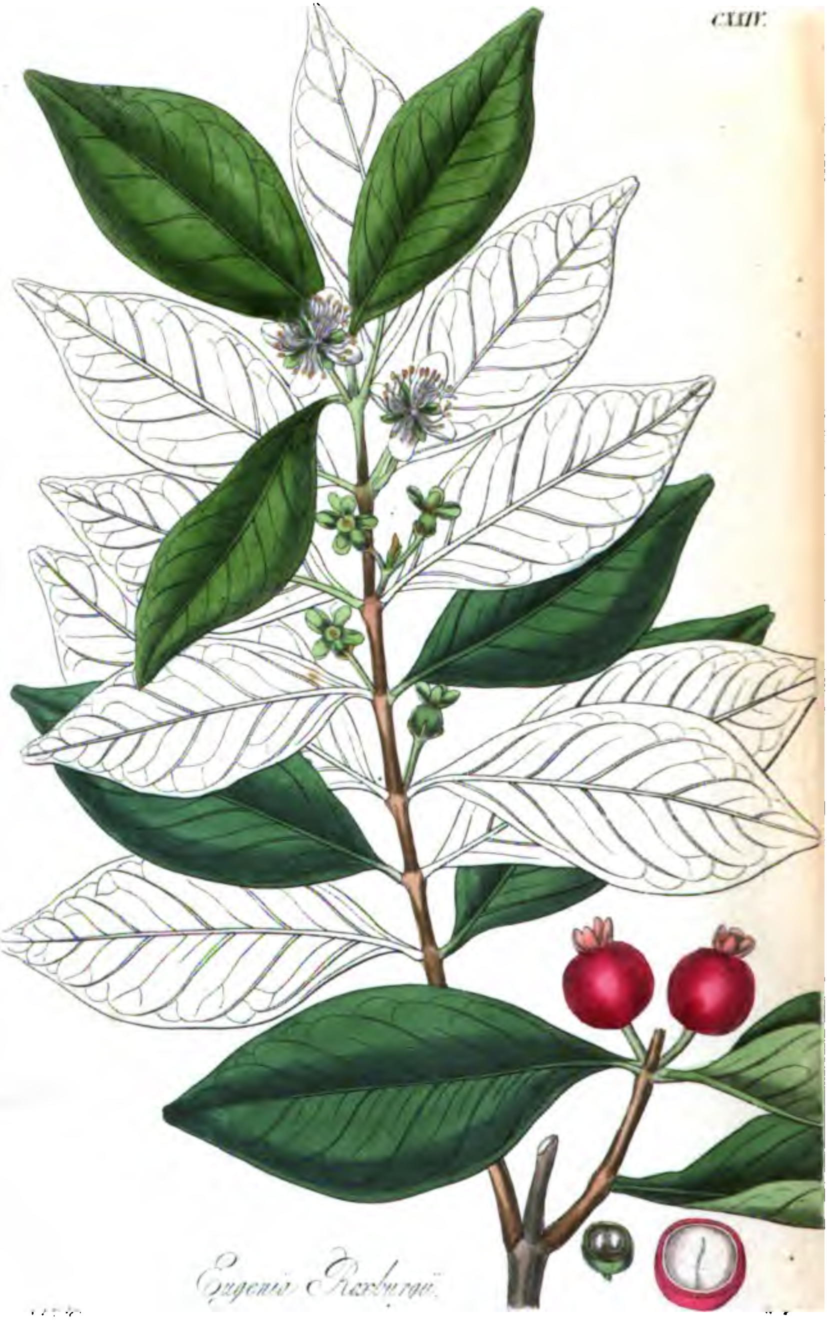


Villarsia cristata

W J H del.

Swan Sc.

CXXIV.



Eugenia Roxburgii.

the stamens; *stigma* simple. *Pericarp* a deep orange-coloured *berry*, about the size of a small cherry, one-celled, one-seeded. *Seed* globular, not divisible into distinct *cotyledons*, but, when cut transversely, showing a line of separation, extending nearly half across its disk.

A native of the sea coast, growing in salt sandy soil. The specimen figured was gathered at Point Calemere, where it is very abundant and luxuriant, attaining to the height of four or five feet. It is in finest flower about the beginning of April, and was nearly past in May, when this description and drawing were taken.

The *Myrtus bracteata* of Willd. (*Eugenia bracteata*, DC.) does not appear to be different from the present, as far as can be inferred from the description.

TAB. CXXIV. Eugenia Roxburghii. *Fig.* 1, Section of a germen. *Fig.* 2, Do. of a fruit:—scarcely *magnified*.

GENERAL VON WELDEN'S CORRESPONDENCE, RELATING TO THE FLORA OF DALMATIA.

[*From the Botanische Zeitung*, 1830.]

[ANY thing relative to the Botany of so interesting and so little known a country as Dalmatia, cannot fail to prove acceptable to our readers; and Baron Von Welden is more than any other man, perhaps, competent to satisfy our expectations on this head; whether his scientific acquirements be considered, or his elevated station, as Military Governor of Zara in that Province. The letters are translated from the originals given in the *Botanische Zeitung:* and they will be read with the more pleasure by those Botanists who are acquainted with the remarks of Drs. Hoppe and Hornschurch on the country bordering on Dalmatia, translated from the same interesting work, and published in the 10th and following volumes of Brewster's and Jameson's *Edinburgh Philoso-*

phical Journal, under the title of "*A Journal of a Tour to the Coast of the Adriatic Sea, and to the Mountains of Carniola, Carinthia*," &c. In some respects the two countries are similar, and Baron Von Welden offers some points of comparison with a considerable portion (Istria) of those which are so well described by Hoppe and Hornschurch.—*W. J. H.*]

ZARA, IN DALMATIA.

If an earnest desire to promote the interests of our Society, and of Science in general, can enable me to be of use in any way, you may depend on my best endeavours. I had scarcely entered Dalmatia, when I looked earnestly around upon its Flora: but the advanced state of vegetation, the intolerable heat, and want of rain, had already destroyed most of the plants, and, instead of flowers, I collected nothing but seeds. Along the whole tract, from Carlstadt to the foot of the Vellebit at Grachatz, comprehending a part of the military boundary, I only found a few interesting plants on the Capella Mountain: *Pyrethrum macrophyllum*, *Buphthalmum* (*Teleckia*) *speciosum*, and *Hypericum Reicheri*, reminding me of the analogy to the Hungarian Flora; while *Scutellaria orientalis* belonged to the productions of Dalmatia. The Capella is a wooded mountain, whose highest point, the Kleck, does not exceed 4,000 feet; it is throughout of chalk formation, with the peculiar character of the country about Trieste, yet, owing probably to the woods, the vegetation has little in common with it. *Digitalis lanata* and *Veronica foliosa*, I found not far from the waterfall of the Gaczka, near Ottochar: this river only runs for a few leagues above ground, turning several mills close to its source, on the mountain Koren, at Urelo; then forming lakes and swamps, and sinking into the soil at Svicze, in a basin below the Vellebit, in the district of St. George at Zengg, to empty itself thus into the sea. Chaff and other small floating bodies, if thrown into this stream at Svicze, reappear in ten or twelve hours at St. George's. All the streams that rise westerly on the Capella have this character, as they run towards the sea below the Vellebit; while those which rise easterly go towards the Culpa. That part of Military Croatia which is situated between the Vellebit and the Capella, forms an immense basin, that may, long ago, have been a large lake, whose mass of waters, being unable to penetrate the firm limestone mountains, have worked out a way by means of subterranean caverns. When entering on the new road at St. Roch, which is now carried over the Vellebit, and which leads to the principal passage through the Licca of Golspich over Zermagna to Dalmatia, and ascends along the foot of Monte Santo to the ridge called Pragg, you have, as far as an elevation of 4000 feet, nothing but the continued and uninteresting vegetation of the Licca. Monte Santo is the highest point of the Vellebit; its top is 6420 feet above the level of the sea, and as the Licca River, near Golspich, is situated 1584 feet above the sea, Monte Santo exceeds it by 4886 feet. The subalpine vegetation occurs only at its summit, whence I have *Achillea Clavennæ*, *Senecio abrotanifolius*, a *Campanula*, closely related to *linifolia*, but with very small blossoms, a large-flowered *Satureja* that seemed new to me, and *Lilium Chalcedonicum*: but no truly alpine plants, though there are plenty of Chamois in the defiles, and of Bears and Wolves in the lower regions. The Point of Pragg, where the new road of the Vellebit will cross, is situated at 3190 feet above the sea. Although the southern side, by which you descend into the Valley of Zermagna to Obravazzo, has the same chalk formation as the northern, yet a totally different and more southerly vegetation prevails. *Iberis semperflorens*, *Alyssum Gemonense*, *Bupleurum aristatum*, *Scolymus Hispanicus*, *Fraxinus Ornus*, *Euphorbia spinosa*, *Paliuris australis*, *Osyris alba*, *Pistacia Lentiscus* and *Terebinthus*, *Quercus Ilex*, &c., satisfactorily prove the difference of climate, if even the different aspect of every object that meets the eye did not attest the alteration that has taken place.

The view of Dalmatia that is gained from the summit of the Vellebit is any thing but attractive. Grey masses of stone, partially covered with evergreen shrubs, that look black in the distance, no trace of culture, or of regular dwellings, seem to warn the traveller to retrace his steps, even if we omit all notice of the scattered inhabitants of this wilderness; here and there an armed Morlach, covered to the chin with dirt! The glimpse, however, of the sea, and the islands in the Morlacca Canal, studded with fresh verdure, may give the wanderer courage to pass the last stony rocks which lie between the mountain and Obrovazzo. I reached the latter place at about noon, on the 9th of July; and, passing over its ruined walls, looked with horror into the dark channel of the Zermagna, on whose left bank the place is situated; my thermometer indicated 28° (Reaumur) in the shade, and yet I felt more comfortable, exposed to the sun's rays, than pent up in the narrow and pestiferous streets of this little town, which is entered through small gates, only half of which is ever opened, but which would require to be thrown altogether, to give a comfortable passage. A hill, surmounted by an old triangular castle, that proved the former dominion of the Turks, was covered with abundance of the beautiful *Conyza candida*. In the evening, I went up the Zermagna to a waterfall which it forms at about one and a half *stund* from the town: the tide flows up to it, and the river, which is navigable for ships, produces plenty of fish and oysters, which are celebrated for their size and flavour. Two old mills, situated on each side of the Zermagna, are covered with *Campanula muralis*, (Portenschlag); I gathered seeds and flowers of this, but nothing else, the sheep having destroyed every plant that the heat had spared. *Inula crithmifolia* and *Pulicaria* accompanied me back to the shore. I started in the night, along a fine chaussée, to the district Bukowitza, famous for its robbers. The deserts of Arabia could not be more sterile than this country, which only seemed to differ by possessing one evergreen shrub. From the highest elevation, the sea of Novegrad and the little Lake of Karin, united to it by a canal, might be seen. The road winds round the lake to the Klostor Karin, the first regular building that recalls the idea of civilization: but what kind of civilized beings are the people here! On establishing the new road, the pious clergy protested against its line being drawn near their territory, for fear of secular commotions;

though these can hardly be deemed dangerous, when my carriage was the only one that had ever left a track on this road. Besides, it is but lately that a wheel-carriage has been known here. An unwieldy chest, constructed of poles, and placed on cylinders of a hollow tree, often in the form of a polygon, and drawn by oxen, has hitherto been the only cart, waggon, or carriage used. I arrived at Smilsich in a few hours after leaving Karin, passing by cultivated fields of *Vines*, *Olives*, and *Mulberry-trees*, alternating with *Indian Corn* and *Potatoes*, that demonstrate the practicability of agricultural improvement, if the will existed in the natives. Even here the rude inhabitant does not lay aside his arms, when following the plough or collecting the harvest; you may see him gathering in the scanty grain with the dagger ("handschar") and pistols in the girdle, and a Turkish firelock on his back; while the miserable walls into which the crop is collected, answer, at the same time, for dwelling-house, barn, and stable. No new plant did I find between Smilsich and Zara, whither I went by Zemonico. The country became more and more barren as I approached this capital of the district; and it was impossible to help wondering what could have induced the natives to make choice of such a spot, till a reflection on the security afforded to it by a strongly fortified isthmus, a little port, and the sea, gave an explanation. I shall say nothing now of the environs and Flora of Zara, which for four weeks I have been examining in the sweat of my brow, but that it is very interesting, and contains much novelty. Meanwhile, I send some seeds, which I beg may be communicated to the Garden at Munich, with my respects to Professor Von Martius. You shall soon hear more of the vicinity of Zara, and of my journey over the whole of Dalmatia. I have met with some amateur botanists, whom I encourage, and have joined Dr. Visiani, and persuaded him to transmit the description of his newly discovered Dalmatian plants to the Botanical Society for publication, which he has done.

The next letter is dated from "Trieste."

I take the advantage of my being accidentally here, to impart to you some intelligence through the medium of Dr. Biasoletto. I left the lovely, verdant shores of Dalmatia eight days ago, to find at this place, Trieste, the appearance of winter, and all vegetation very backward, as was proved by a walk over the Hundsberg to the botanical "Monte Spaccato," where we found nothing but *Erythronium Dens Canis*, and *Helleborus viridis*. On my way, I collected at Pirano the *Primula grandiflora*, fl. albo, *Leucojum vernum*, and *Scilla bifolia*. —The winter has been unusually severe in Dalmatia, we had, upon the coast, some weeks, during which the thermometer stood at 2°–0, but no snow except on the mountains, where it melted on the first sunny day, and this weather was more frequent than the cloudy days. *Sternbergia colchiciflora*, and *lutea*, blossomed, though rarely, to the end of December: *Arbutus Unedo*, and *Crocus Dalmaticus* (*Vis.*), were more plentiful. With the New-Year, *Helleborus multifidus* (*Vis.*), appeared, and then nothing more was seen till the middle of February, when, by degrees, sprung up *Ixia Bulbocodium*, *Colchicum montanum* (not of De Cand., which is *C. arenarium*, W. K., and which I once gathered in flower on Mont Cenis), afterwards *Anemone stellata*, *Hyacinthus Romanus*, *Narcissus Tazetta*, and, lastly, in the beginning of March, a *Draba*, and a *Meleagris*, that was new to me: then *Iris tuberosa*, *Viburnum Tinus*, *Erica Mediterranea*, *Ranunculus Ficaria* (very different from the German plant, especially in its spotted foliage), *Hyacinthus botryoides*, and *Erodium cicutariæfolium*. The very suitable kind of weather for planting, afforded me an opportunity to execute a project, of which my mind had been very full, which was that of a public garden, destined particularly for the Flora of Dalmatia, and which I wished to set down on one of the largest and most elevated bastions of the fortress of Zara. This forms a hill of 6°–7° elevation, protected from the Bora (north wind), and having near its entrance some deep dells, that appeared to me very suitable for the culture of the more delicate plants. A wide path led around it, passing a Kiosk and a coffeehouse, and by several gentle windings alternating the summit, whence there is a most noble prospect, looking north-east to the snowy top of the Willebitz, and to the Buccowitza, the wildest part of Dalmatia; south-west to the Canal of Zara, and the opposite islands; and north-west into the open sea. The situation designed for particular experiments, and especially for seeds, is a large hollow, shaded with *Acacias*, and purposely enclosed. In this space of the bastion, which is called "The Five Springs, or Wells," there have been planted, from December to the time of my departure, (30th March,) 5380 Trees and Shrubs; mostly such as only succeed under glass with us; as whole groves of *Nerium Oleander*, *Laurus nobilis*, *Arbutus Unedo*, *Viburnum Tinus*, *Celtis australis*, *Quercus Ilex*, *Ilex Aquifolium*, *Citrus*, *Terebinthus*, *Phyllirea*, *Erica Mediterranea* and *arborea*, *Rhus Coriaria*, *Acacia Julibrissin*, *Tamarix Africana*, *Punica Granatum*, *Lonicera Etrusca*, *Cytisus fragrans*, &c. Among the larger deciduous trees are various species of fruit and *Mulberries*, among them the beautiful *Morus macrophylla*, or *Morettiana*, *Poplars*, *Acacias*, *Planes*, *Bignonias*, and the finest sorts of *Vines*: all were thriving beautifully when I quitted my nursery; and when I revisited it, in the course of a few days, I carefully sowed some foreign vegetables, that were unknown in Dalmatia, and I mean to try the *Phormium tenax*, which may be expected to answer well. Another spot is allotted to the *Bulbous*, *Tuberous*, and *Annual Plants* of Dalmatia, among them are already 8 *Orchideæ*, *Pancratium Illyricum*, *Iris tuberosa*, the 2 *Sternbergias*, *Arum tenuifolium*, *Colchicum montanum*, &c.; besides the interesting alpine Flora of Biocovo, *Arenaria Arduini*, *Dianthus integer*, *Campanula Pumilio* and *serpyllifolia*, *Teucrium Arduini*, *Echium petræum*, &c. Arrangements are made for the strict investigation of the hitherto unknown parts of Dalmatia.

Zara, 12*th March*, 1830.

My prolonged residence in Dalmatia now enables me to speak with more certainty on the appearance of the plants of this country, as I have examined them myself at all seasons of the year. With regard to the soil, which is well known to exert a considerable influence on vegetation, it is throughout calcareous; consisting of large masses, interspersed with deep cavities, where the water lodges. The formation of the loftier mountains is primitive grey limestone, in strata, mixed with red oxide of iron. The lower districts consist more properly of a yellowish white Jura chalk, frequently mingled with hornstone, organic remains, nummulites, shells, and even skeletons of fish and crustaceous animals. Remains of plants occur in a bluish grey mass of marly chalk, which again passes into sandstone. Where the primitive chalk rock prevails, the water sinks into the subterranean hollows that it forms; and a mass of a crumbling marl, brown clay, and brown coal, extends from the Promina, over Much and the Mosor, as far as Biocovo. Loam organization appears on the Turkish border from Imoschy down to the Narenta; most of the low grounds, however, are filled with a heavy red-coloured iron ochre. The only fertile land of Dalmatia, about Dernis, Much, and Sign, consists of brown coal formation, decomposed by the action of the atmosphere. The direction of the mountain-chains is from north to south; that of the few rivers, the Zermayne, Kierka, Cettina, and Narenta, from east to west, that is, naturally, towards the sea. The principal ridge of mountains separates itself on the Turkish border from the Vellebit, and running from the coast along the Morlacca Canal, attains an elevation of 4000 to 5000 feet, forming at the Dinara a summit 5660 feet high, from which the Bosnian Alps derive their name. This ridge, which continues on the left bank of the Cettina, towards the Narenta, becomes more and more level, and finally disperses into several little branches. From the Dinara to the highest point in Dalmatia, another mountain chain diverges, first rising into a summit, called the Promina, 3600 feet, and then proceeding to the Swylaja mountains, whose most elevated point is 4743 feet. This mountain branch passes through the low ridge at Much, thence southerly, and rises considerably to the mouth of the Cettina, where it takes the name of the Mosor Mountain, and its highest summit is 4200 feet. The river Cettina seems to have here violently forced its way into the sea; for another ridge, which proceeds down along the coast by Macareska to the Narenta, called the Biocovo, was doubtless once united with the Mosor. The highest elevation of the Biocovo is 5520 feet, and this, with the Dinara, constitutes the extreme point of Dalmatian vegetation. Besides these ridges, the Continent of Dalmatia consists of capes (among which the Buccovitza is 3100 feet, the Tartar's Hill, 1560 feet, the Karban, 2456 feet, and Sweti Jura, which rises behind Spalato, 2135 feet), and of stony plains, of which the most extensive reaches from Novigrad over Nona and Zara, to the Kerka.

The other portion of Dalmatia, namely, the Islands, may be considered rather hilly than flat; Brazza and Scolta having the lowest, and Lissa and Corzola the highest mountains. The lines of vegetation in Dalmatia may, therefore, be thus drawn:—firstly, from north to south, and there again the boundary between Trau and Sibenico is marked by a natural line, separating the southerly from the more northerly Flora: the first possesses the characters of the Grecian and Apulian vegetation; while the second includes the productions of Croatia and Istria. The Islands belong to the first;—upon them, at an equal elevation with the Continent, grow many of the southern plants which are not seen there, as *Punica Granatum*, *Myrtus communis*, and *Viburnum Tinus*, &c. The *Oleander* (*Nerium Oleander*) marks the proper boundary between the southern and northern vegetation of Dalmatia, the first taking place at Salona: the line then passes to the Isles through Lessina and Lissa, which have a very different vegetation from the other Islands. Other lines may be drawn from east to west, thus dividing the Flora of the plains, of the sea-shore, of the stony hills, and of the higher mountains. But before proceeding to a more minute statement of the vegetation, it is requisite to say a few words on the climate, that influential cause, equally powerful with the soil. The situation of Dalmatia, which is a tract of land, in some parts sixty German miles wide, extending from the sea-shore inland to the mountains, and including 2 degrees of latitude, renders it evident that the climate cannot be alike throughout. Thus Ragusa and Cattaro are warmer by 2 or 3 degrees of temperature than the district of Zara near Vellebit. There is no actual winter on the Dalmatian coast; for we cannot so term 1–2 degrees of cold, which last but for a few days; what sometimes renders the climate inclement is, the prevalence of stormy winds, among which is one called *Bora* (Boreas?), which, rushing over the Canal of Morlacca, raises the sea into great waves, and covers vegetation with such a sprinkling of salt as to cause its destruction. These storms, though violent, are not frequent. They commence in November, and the winter begins at the end of that month. Still, during December and January, the *Crocus*, *Colchicum*, and *Ixias* are in blossom, with *Helleborus multifidus;* the grassy places are greener than in August, and in the end of February, which is generally the most inclement month, the spring commences. This is the case with the coast district, every thing being a month later on the mountains. A multitude of bulbous plants expand, and new flowers adorn every day in March. *Iris tuberosa*, *Narcissus Tazetta*, and *Ornithogalum reflexum*, are seen under the hedges between evergreen shrubs of *Laurus nobilis*, and *Pistacia Lentiscus* and *Terebinthus*. *Geranium tuberosum*, *Campanula cordata*, and *Lathyrus inconspicuus* appear towards the end of March, among the corn. By the middle of April, the whole surface of the earth is in a blaze of blossom; you cannot gather fast enough, every thing goes as rapidly out of flower as it appears, or is immediately cropped by the sheep and goats. May is particularly rich in *Orchideæ*, and flowering shrubs, while June favours the *Umbelliferous* and *Syngenesious* plants, and a heat of 17°–18° prevails in the middle of that month. Now the Botanist must be quick indeed, for rain ceases, and the heat burns up all verdure, and in July ascends to 25°. Not a drop of moisture falls till the close of August, except on the mountains; but a heavy dew keeps vegetation alive.

The snow often lies on the higher mountains of Vellebit till the end of April, and on the Dinara and Biocovo sometimes even till late in May. Storms are very rare in general; they are most frequent in February and March, but never in the hot months. The temperature, during the prevalence of the Bora, varies rapidly from 10° to 15°; otherwise the evenings are moist and cool. Clouds are much attracted by the mountains; but the weather is clear on the coast and the islands, and I never remember to have seen either a fog or snow on the shore. From these circumstances, the vegetation always maintains its peculiar character. The great prevalence of thorny shrubs and prickly plants is remarked by every one who visits Dalmatia: they are a continual annoyance and a hindrance to one's progress. *Rhamnus Paliurus*, and *Rubus cæsius*, with *Punica Granatum*, *Rosa spinosissima*, *Lycium Europæum*, and *Smilax aspera*, grow intermingled, and surround all the fields like hedges, presenting a barrier which would be almost impenetrable to an army of soldiers. Woe to him who should endeavour to scale this formidable rampart! On the ground, the traveller is impeded by the rough and prickly *Echium pustulatum*, *Spartium spinosum*, *Acanthus spinosissimus*, *Echinops Ritro*, *Asparagus acutifolius*, *Buphthalmum spinosum*, *Capparis spinosa*, 3 species of *Eryngium*, *Carlina acanthifolia*, *Euphorbia spinosa*, *Juncus acutus*, 3 *Junipers*, *Cactus Opuntia*, *Onosma stellulatum*, *Serratula arvensis*, *Echinophora spinosa*, *Onopordon Illyricum*, *Centaurea solstitialis*, *Carthamus lanatus* and *tinctorius*, *Scolymus Hispanicus*, and *Xanthium Italicum*. These wound the passenger at every step, and particularly during the summer, when they are dry, render many districts quite impassable:—would he find a resting-place, the weary man must lie or sit down on a bed of thorns, rendered still more intolerable by the number of insects that they harbour. There are no, properly speaking, *alpine* plants in Dalmatia, but subalpine ones on the Vellebit, the Dinara, and the Biocovo, as *Senecio Doronicum*, *Achillæa Clavennæ*, *Sedum stellatum*, *Draba lasiocarpa*, *Saxifraga rotundifolia* and *repanda*, *Androsace villosa*, *Gentiana verna*, *Primula spathulata*, &c.; the latter is the only species of *Primula*, though *P.*

acaulis grows so abundantly in the neighbouring country of Istria. It is singular how many plants frequent the coast here, which are elsewhere confined to the mountains, as *Campanula graminifolia, Dictamnus albus, Anthericum Liliago*, &c.; while, on the contrary, plants here grow exclusively on the mountains, and particularly on the Biocovo, which in other places occur only on the plains; as *Arctium Lappa, Berberis vulgaris, Betonica officinalis, Campanula glomerata, Carlina acaulis, Convallaria Polygonatum, Daphne Mezereum, Fagus sylvatica, Fraxinus excelsior, Linum catharticum, Prenanthes muralis*, and *Spiræa Filipendula;* whereas I have found other plants both on the sea-shore and the upper parts of the Biocovo, as *Valeriana officinalis, Illecebrum serpyllifolium, Trifolium arvense*, &c.

Generally speaking, the Flora of Dalmatia has most coincidence with that of Greece; next, a considerable resemblance to that of Istria, and something in common with that of Croatia and upper Italy; very little with that of the Apulias, and scarcely any thing in common with the productions of Germany: at least so far as our present knowledge of its vegetation warrants these conclusions. Hitherto Dalmatia may be considered as exclusively producing the following plants: *Myrrhis colorata, Helleborus multifidus, Cardamine maritima* (the latter grows also on the Island of Osero in Istria), *Chrysanthemum Turreanum, Seseli tomentosum, Farsetia triquetra, Berteroa decumbens, Echium petræum, Trifolium mutabile, Campanula Pumilio, cordata* and *serpyllifolia, Hedysarum variegatum, Galium rupestre, Asperula canescens, Anchusa microcalyx, Cerinthe purpurea, Pastinaca selinoides, Medicago crassispina, Dianthus integer* and *racemosus, Stachys fragilis, menthæfolia, subcrenata* and *spinulosa, Trifolium succinctum* and *Dalmaticum, Hesperis glutinosa, Centaurea Salonitana*, and *Cytisus Weldeni. Gentiana crispata* and *flavescens* occur exclusively on the highest tops of the mountains of Biocovo, *Cerinthe purpurea* only on the Bocaya, *Farsetia triquetra* solely at Clyssa and Almissa, and *Centaurea Salonitana* is peculiar to Salona. Among the newly discovered plants by Portenschlag and Visiani, are *Hedysarum* *variegatum*, *Trifolium mutabile*, and *Silene Thomasini*, found only once, and never again. The *Berteroa procumbens* of Portenschlag, Professor Reichenbach unites with *B. mutabilis* that grows abundantly, and blossoms in September, when Portenschlag was not in Dalmatia. As to what regards the plants last described by Visiani, I consider his *Hyoscyamus varians* to be synonymous with *H. Canariensis* of Ker; as plants raised from Portuguese seeds sufficiently convince me. *Andropogon pubescens* I cannot distinguish from *A. hirtus* of the Abruzzi; the former becoming hairy in proportion to the dryness of the soil where it grows. I have never seen *Asperula canescens*: *Herniaria rotundifolia* is most closely allied to *H. hirsuta*: and *Anthriscus Cerefolium* has never come in my way. *Ornithogalum saxatile* is like *O. Garganicum*, but smaller in all its parts, which may be owing to the soil. *Silene Thomasini*, *Vesicaria microcarpa*, and *Satureja parviflora*, I have never observed. *Astragalus argenteus* requires careful examination and comparison. *Lathyrus Stans* I am unable to distinguish from *L. inconspicuus* of Sprengel; nor *Achillaea argentea* from *A. Clavennæ*. *Centaurea cuspidata* and *punctata* I have not seen; nor *Picris laciniata*. It must, however, be understood that I am far from seeking by these remarks to impugn the opinions of so learned and experienced a master in Botany as Visiani; I but state my own convictions, as is allowable to every one; and by this, perhaps exciting attention and investigation, I may give rise to a closer examination than would otherwise have taken place. Besides, Dalmatia is, like all other wild countries, but very little examined, and it may well be supposed, that if the very rapid journeys made by these botanists elicited so much novelty, yet that scarcely the half can have been discovered; for as there is, in fact, something always in flower all the year, and every thing goes quickly out of blossom, so each season should be carefully scrutinized.

A better idea of the multiplicity and variety of the Flora can hardly be given, than by stating what I observed, that, without stirring from the place where I sate, I could at once collect 21 different species of plants, of which only two occur in Germany. In order, therefore, to explore Dalmatia completely, several years would be requisite. What hindrances, however, do the peculiarities of the country and its inhabitants present to the investigation of its productions! The whole extent, along the boundaries of Bosnia, could only be examined under the protection of a strong military guard; and the same is the case with the Vellebit and Buccovitza. Again, it is almost impracticable to enter the country bordering on Montenegro and the Catareser district. The coast is more accessible, and the islands most so of all; but even these are almost a *terra incognita.* Indeed, the ardent naturalist who should commence such an undertaking must prepare himself for extraordinary difficulties and privations. Neither shelter nor provisions will he receive;—even bread he must carry with him. A correct knowledge of the language of the country, and the manners of the Morlaks, with recommendations for aid and protection, would be indispensable. Thus, though much labour has been lately devoted to exploring Dalmatia, the day is yet distant when this object shall be accomplished. The history of these examinations is briefly as follows. Whilst the country remained under the rule of Venice, individual travellers could hardly enter it;—still the celebrated names of Boccone, Donati, Wulfen, and Cyrillo, stand honourably connected with the natural history of Dalmatia. Since this province fell under the Austrian sceptre, the government of that country has exerted itself to explore its productions, and in the year 1802, M. Joseph Host and M. Von Schonus were permitted to travel there. Finally, the Emperor, who favours the study of botany, when he visited Dalmatia in 1816, took in his suite Dr. Portenschlag and a gardener; and instituted a scrutiny into the productions of Dalmatia. The very numerous discoveries which Portenschlag made in so short a time, for he only staid two months in the country, and which death prevented his giving to the world, attracted considerable attention. A young Dalmatian, Dr. Von Visiani, who was appointed an associate to the Botanical chair at Padua, on his occasional visits to his native land, has examined its Flora, especially the immediate environs of Sebenico, and found, I may say, immediately before his own door, a dozen of new plants. Several more extensive excursions that he made at various seasons of the year, after returning home, enabled him to publish, in 1826, a still little-known, though meritorious work, the *Specimen Stirpium Dalmaticarum*. Besides a survey of the country itself, including the late discoveries, it contains the first list of the plants detected by himself in Dalmatia. This was followed, in 1828, by his "*Plantæ rariores in Dalmatia recens detectæ*," containing 37 new plants. At this period, several zealous botanists accidentally met in this country. M. Von Thomasini was, for a short time, at Cattaro, where he made some interesting discoveries, which he communicated to Host. Neumeyer, an industrious collector, though not a favourite of Fortune, remained a long while at Ragusa, and carefully examined its environs, and Dr. Visiani, who formerly lived at Sebenico, is now settled at Cattaro as a physician. The country round Spalatro owes a most assiduous examination of its productions to Professor Petter, who has detected there many plants that were formerly considered excessively rare. To the work that he is preparing on Dalmatia he will annex a Botanical Appendix of the plants hitherto found here; for which he has received contributions from all the botanists. Professor Alschinger and Mr. Rubrizius, Commissary of Police, are two very industrious collectors, and they have discovered many things in the environs that had formerly been sought for at a great distance. The first also devotes his leisure hours to instructing young people in botany, purely from a fondness for this interesting study, and both are most active and unwearied mountain-climbers. At Pago resides the physician of the district, Dr. Cariboni,—at Trau, a landed proprietor, M. Von Garagnini, who employs himself in the cultivation of forest timber-trees; and during last spring, Dr. Biasoletto of Trieste also travelled in Dalmatia, and made some interesting discoveries. During my stay in the country, I did not fail to avail myself of my frequent excursions, and the security with which I could go from place to place, to investigate such spots as no botanist ever visited before; my harvest of collections threatens to drive me out of the house, and as I cultivate all the most interesting plants in the garden, I am thereby enabled to examine them the more accurately.

Nothing causes me more regret than that the total seclusion of this place cuts me off from all opportunity of knowing what is done in science elsewhere; that there should be no bookseller here is not a matter of surprise; but the difficulty of communication by land where no post-carriages travel, and the slowness and uncertainty consequent on sending by sea, almost render it impossible to obtain a book in this remote corner of the globe. I may, however, mention one class of botanists whom the traveller must not pass unheeded; which is the rude Morlacks themselves. Like all men in an uncivilized state, they live constantly abroad, and are more attentive observers of nature than might be imagined; they give proper names to the plants, and are diligent industrious collectors. An old Pandur at Macarsca, who, in 1818, accompanied Mr. Portenschlag to the top of the Biocovo, still remembered correctly this summer all the habitats of the interesting plants which that botanist had found, and could point them out to me again. It is sufficient to show a dried specimen to a Morlack, or to describe it correctly to him, and you may be sure of obtaining it. Many collectors have adopted this plan for procuring interesting plants with security and ease, especially in the Cattareser district, where not a step can be taken without an escort. It has frequently happened in my solitary rambles that I have been surrounded by many obliging Morlacks, who being very curious, immediately guessed at my object, and in their eagerness to assist me, brought, unasked, their caps full of flowers, grasshoppers, butterflies, or spiders, (the insects certainly in a very mutilated state,) or with their spades dug up living plants, or helped me to catch lizards and snakes, which they know perfectly well, and are aware whether they are poisonous or not. You must be prepared, however, for a host of queries, for they want immediately to know the uses of them, and being, moreover, very superstitious, are every one furnished with an account of a frog that bit a man, or a snake that milked a cow, &c., and you perhaps find some trouble in getting rid of these companions, who are themselves perfectly walking cabinets of Entomological specimens. The best method of rewarding and dismissing them is by a little present of tobacco or gunpowder.

As in other parts of the world, some plants are here quite local, while some are generally dispersed, and others inhabit only the coast or a peculiar region. In general, *Tuberous* and *Bulbous plants*, *Umbelliferæ*, and *Syngenesiæ*, are most prevalent. There are but few of the *Leguminous Tribes*, many of those that are commonest with us being wholly wanting; as the genera *Pedicularis*, *Sanicula*, *Swertia*, *Eriophorum*, *Drosera*, &c., which may be ascribed to the great dryness of the climate, most of the above genera being inhabitants of swamps.

The gradual increase of the Flora of Dalmatia is proved by the following statement:—Portenschlag found 10 species of *Centaurea*, to which Visiani added 7 more, and my Dalmatian herbarium contains 21. Of *Inula*, again, Portenschlag collected 6, Visiani 3, and I possess 11: of *Medicago*, the first botanist knew 7 species, Visiani found 4 new ones, and I have 12. Portenschlag gathered 9 *Trefoils*, Visiani 14, and I 28. The *Orchideæ* are the most striking; Portenschlag knew of 3, —there are none enumerated in Visiani's collection, but I have altogether 17 different species. The late discoveries which accrued from my last year's numerous excursions, may here be quoted. *Artemisia Narentina* (Visiani), was brought by Petter from the Narenta, where it blossoms plentifully in the middle of September. *Arenaria gracilis* (W. K.), I brought from Biocovo, a plant new to Dalmatia, as are *Salvia obliqua* (W. K.), on hills at Karia, and *Ophrys Speculum*. Dr. Biasoletto gathered *Genista florida* at Pago, and *Velezia rigida* about Stretto, for the first time in Dalmatia; and I detected *Periploca Græca*, and a very little *Plantago* (*P. minuta*, mihi,) in the valley of Narenta, with *Cytisus fragrans* (mihi), (*C.*

Weldeni, Vis.,) which I found last autumn at the foot of the Biocovo, occupying whole districts, which, when in flower, it fills with its overpowering scent. The goats that eat the blossoms of this shrub yield, at the time, a milk which occasions the headache. This plant, which never becomes arborescent, is distinguished by its shooting out leaves twice in the year, the second growth being much smaller, and more pointed than the first, and remaining green till late in the winter. *Gentiana crispata* and *flavescens*, Vis., were discovered by Professor Petter on the Biocovo, flowering in September. *Lilium Chalcedonicum* I found on the Vellebit last year, with *Senecio abrotanifolius*, *Androsace villosa*, *Achillea Clavennæ*, *Mentha Croatica* (new to Dalmatia), *Campanula tenuifolia*, W. K., and *C. divergens* on the Karben mountain. *Sempervivum stellatum*, a *Bupleurum*, and *Euphorbia*, that seem to me new, I possess from the Biocovo. *Astragalus Milleri*, (Stet. Hoch.,) about Karin, *Euphrasia serotina*, W. K., *Onobrychis sphacelata*, *Myosotis Apula*, *Orchis Simia*, *sambucina*, *fusca*, *pyramidalis* and *variegata*, *Ranunculus Illyricus*, from the Vellebit, *Scabiosa acutiflora*, Reich., *Saxifraga repanda*, *Veronica arvensis*, &c. besides *Convolvulus Cneorum* on Lessina, *Anthyllis Barba Jovis* at Comissa, and *Pancratium Illyricum*, both in abundance at Lissa, *Corrigiola littoralis*, and *Cardamine Gidea*, at Corzola, with several other plants, the fruits of later research, prove how rich is the Flora of this country at almost all seasons of the year; for even in autumn, when every thing is out of blossom in Germany, a new life seems to pervade the plants here, which frequently flower for the second time, September yielding a harvest to the botanist of from thirty to forty most interesting species.

The numerous attempts that I have made at cultivation prove how great are the difficulties which the extreme heat and absence of rain during the hottest season of the year, present towards the naturalization of the more useful and ornamental Europæan plants. Among the few that succeed well, are the *Mulberry*, *Robinias*, the various species of *Rhus*, *Acacia lophantha* and *Farnesiana*, *Nerium splendens*, and some kinds of *Poplar*. All the *Fruit-trees* fail immediately, or quickly degenerate and die; probably on the mountains they would thrive better. *Indigo* and *Cotton* plants, with *Phormium tenax*, grow well if plentifully watered at first; the former, especially if the season is not too dry, produces ripe seeds; the failure of which prevents so often its culture in more northerly districts. I have planted the Indigo sometimes at random in the worst soil, giving it no water, and yet it has thriven prodigiously: a mild climate and the sea-air being very congenial to this shrub, it may be expected to answer well in Dalmatia. Vegetables generally succeed, and at every season; though the want of rain is unfavourable to their culture; still I have remarked, with surprise, that those which have been watered, from the time of setting with salt water (aqua grossa), thrive well, this fluid preserves them from snails, but, at the same time, rendering them brittle. The potatoes are very fine, and you have vegetables all the year round in the open air, but not in the autumn months, for want of rain. Several kinds, as *Sallads*, may be obtained two or three times in the season. The propagation of ornamental flowers would answer well, if attended to, except the bulbous-rooted kinds; all the species of *Pelargonium* survived with me in the open air to the present date (December, 1829.) The excellence of the soil and climate is truly remarkable; every twig carelessly stuck into the ground takes root, and plants of *Robinia* and *Acacia* become, in the second year, 5 feet high. *Mulberry-trees*, *Olives*, and *Vines*, appear to thrive most in this climate; still their culture, though protected by Government, is far from being flourishing. The vineyards about Sebenico, Almissa, Macarna, and the Islands, produce, nearly without any care, strong, fiery, and noble wines, of every kind and colour; but the fifth part of the harvest is yearly spoiled for want of a proper method of storing it; this being also the cause that the liquor will not keep more than one year. It would not come within the bounds or province of this paper to fathom the reasons why Dalmatia is not now the paradise it must once have been, when Dioclesian would not have changed it for the noble champaigns of Italy, to which its delicious climate is more suited than to the rude people who inhabit it. My intention is fulfilled, if this slight sketch encourage others in further investigation.

SPRING FLORA OF DALMATIA.

The winter of the year 1829–30, so abundant in unusual phenomena all over Europe, had also its peculiar effect on the wild coasts of Dalmatia. We had constant Siroccos till the beginning of December, a little of the Bora (north wind), and the thermometer down to 0°. *Crocus odorus* (?) *serotinus?* Bert., was the last flower that this month permitted to survive. January was at first cold; that is, there were some nights when we had 2° on the coast; it also snowed a few times. The Sirocco likewise continued, and on the 12th and 19th there were violent storms, attended with earthquakes, which were more strongly felt at the district of Ragusa. The temperature rose to 7°, and on the 18th January I gathered *Colchicum montanum* (for various reasons not the plant of Linnæus), *Calendula arvensis*, and *Bellis perennis*, while *Helleborus multifidus* blossomed in the gardens; and the mountains, down to the middle regions, were still clothed with snow. The cold soon returned, and February brought such weather as had been never heard of in Dalmatia; the 3d was the coldest day, and at four in the morning the thermometer stood, near the sea, at 6½°, and the snow was a foot deep. Winter did not take its departure till the middle of the month, and then the spring came on most rapidly, the genial rays of the sun wakening the sleeping plants, and the thermometer, when protected from the wind, indicating 11°. On the 20th February, when engaged in botanizing, I was surrounded with swarms of butterflies; every tree and shrub was bursting into leaf, and this is the list of what I found from the end of January to that time, arranged in the order in which I gathered the plants. *Calendula officinalis*, *Ranunculus Ficaria*, *Viola odorata*, *Erica Mediterranea*, *Mercurialis annua*, *Alys-*

num saxatile, *Hyacinthus orientalis*, *Narcissus Tazetta*, *Erodium pimpinellifolium*, *Juniperus Oxycedrus*, *Picridium vulgare*, *Ixia Bulbocodium*, *Anemone stellata* and *coronaria*, *Ulmus campestris*, *Senecio vulgaris*, *Veronica hederæfolia*, *Salix alba*, *Cardamine hirsuta*, *Thlaspi perfoliatum*, *Quercus Ilex*, *Draba verna*, *Amygdalus communis*, *Geranium malacoides*, *Sisymbrium vimineum*, *Ruscus aculeatus*, *Crocus variegatus* (I may here mention that there are 4 species of *Crocus* in Dalmatia), *Saxifraga tridactylites*, *Lithospermum arvense*, *Iris tuberosa*, and *Allium Chamæmoly*. The market is full of the finest vegetables, cultivated in the open ground. The cold weather has not injured the *Olive*, *Citron*, or *Laurel* trees; a proof of the severity they are able to bear: and for three weeks we have had the finest possible weather, no rain, constantly pleasant, temperate winds, with the thermometer often rising at ten o'clock to 15° (not exposed to the wind). *Phormium tenax* (but not the *Pelargoniums*) has borne the winter well in the open air. I am preparing for a sea-voyage that I mean to undertake in six weeks to the Islands of Lissa and Belagosa, and to Albania, returning along the borders of Montenegro and Bosnia, where I hope to collect many new things. Last year M. Neumeyer found near Ragusa a new *Astragalus*, and M. Petter, in the vicinity of Spalatro, an undescribed *Pastinaca*, which will be noticed by Dr. Visiani. The other kingdoms of nature will not be forgotten. M. Neumeyer's collection of Dalmatian *Reptiles* equals in extent that of stuffed *Birds* and *Fishes* formed by the Baron Feldegg at Spalatro. Finally, we have succeeded in obtaining several specimens of the *Jackal*, here called *Wild Dog*, one of them alive, for the Royal Cabinet of Natural History at Vienna.

GENERAL VON WELDEN.

LIST OF MOSSES IN THE DILLENIAN HERBARIUM.

By G. A. W. Arnott, Esq. and W. J. Hooker.

In 1803, Mr. Dawson Turner and Mr. Joseph Woods examined the Herbarium of Dillenius at Oxford, with a view to determining many of the doubtful plants of that celebrated author's *Historia Muscorum*, by the only satisfactory means of ascertaining them, a careful inspection of the specimens themselves; and the result of their investigation is given in the 7th volume of the Transactions of the Linnæan Society. It is to be regretted, however, that the leading object of those gentlemen, in every respect so well qualified to have commented upon the whole, was the *submerged Algæ*. The single day that they were alone able to devote to it, served them only to look through the *Confervæ*, *Ulvæ*, *Lichens*, and *Hypna*, with some care; and to take but a hasty view of the remaining genera of *Mosses*. It has been our object in a late visit to Oxford, and by the permission of our valued friend Professor Williams, to fill up the blank which exists in the Catalogue of Messrs. Turner and Woods, and our attention has been exclusively devoted to the *Mosses*, which is certainly a very extraordinary collection, considering the period when it was formed, and it is still in a perfectly good state of preservation.

There appears to us to be a mistake in regard to the station of certain of the *Mosses*, given as natives of "Patagonia:" the species so marked being in several instances known to be inhabitants of North America.

The Tables and Figures refer to the plates of the *Historia Muscorum*, the specimens being so numbered as to correspond with them.

December 5, 1832.

Tab. III. *f.* 1, Bryum *androgynum*, Hedw.
2, Tetraphis *pellucida*, Hedw., excepting 2 A, which is *Bryum stellare*, from Haller.

TAB. III. *f.* 3, 4, } Bryum *palustre*, Sw.

8, B. *palustre*, var. *Mnium reclinatum*, auct.

TAB. XXXII. *f.* 1, Sphagnum *obtusifolium*, Ehrh.

2, A. S. *acutifolium*, Ehrh.

2, B. S. *cuspidatum*, Ehrh.

3, Dicranum *flexuosum*, Hedw.—At the bottom of the sheet in the herbarium is a specimen, inscribed, "*Bryum capillaceo folio*, capitulis sphæricis fere sessilibus per caulem, alpinum *Halleri*, qui sub hoc nomine misit. Ego ad illum similis Sphagno, &c. 3, sed magis strigosum et non ramosum, summitatibus" &c. Est *Bryum* 4, *Hall. En. St. Helv. p.* 109. *t.* 3. *f.* 8. de quo vidi ejusd. *f.* d. d. *p.* 770." Upon comparing this with Haller's *Hist. St. Helv. v.* 3. *p.* 43. *n.* 1802, it appears that this is the *Bryum* 1. *var.* Hall., p. 340 of Dillenius, but which the latter, afterwards, in a letter to Haller, approached to his *Sphagnum* 3. It is *Bartramia Halleriana.*

4, Grimmia *apocarpa*, Hedw.

5, A. Anictangium *ciliatum*, Hedw.

5, B. Anictangium *filiforme*, Mich., from North America.

6, Daltonia *heteromalla*, Hook. et Taylor.

7, Neckera *glabella*, Schw., from Patagonia.

8, N. *undulata*, Hedw.

9, N. *pumila*, Hedw.

10, Phascum *subulatum*, Linn.

11, P. *cuspidatum*, Schreb.

12, P. *cuspidatum*, marked "dwarf" by Dillenius—not *P. muticum* as is usually supposed.

13, Diphyscium *foliosum*, Mohr.

TAB. XXXIII. *f.* 1, Fontinalis *antipyretica*, Linn.

2, Cinclidotus *fontinaloides*, Beauv.

3, Fontinalis *squamosa*, Linn.

4, Dicranum *semicompletum*, Arn., from Patagonia. In the herbarium are specimens of a plant, not represented in the figure, but noticed in the description, *p.* 260,

" from New Providence in Carolina;" this is, however, *Jungermannia spinulosa*, Dicks.

5, Fontinalis *capillacea*, Dicks.

Tab. XXXIV. *f.* 1, Dicranum *bryoides*, Sw.

2, D. *taxifolium*, Sw.

3, D. *adiantoides*, Sw.

4, D. *bryoides*, var. *osmundioides*.

5, Hypnum *denticulatum*, Linn.

6, The upper species in the herbarium is *H. riparium*, but the lower one, *H. denticulatum*, Linn., and this seems to be the one intended, both in the description and figure.

7, H. *complanatum*, Linn.

8, H. *trichomanoides*, Schreb.

9, B. Hookeria *tomentosa*, Arn. 9, A. is not in the herbarium, or if so, is not marked A.; all the specimens have striated capsules.

10, H. *lucens*, Sm.

Tab. XXXV. *f.* 13, Hypnum *splendens*, Hedw.

14, H. *proliferum*, Linn.

15, H. *prælongum*, Linn.

16,—Reddish and very shining; it resembles the figure given, but there is no fruit; it is probably *H. cupressiforme*, Linn.: with it is mixed in the herbarium, but *not* figured, another plant, which appears to be *Hypnum plumosum*, Linn. (seta not scabrous.)

17, H. *abietinum*, Linn.

Tab. XXXVI. *f.* 18, H. (Leskea) *rostratum*, Arn., as to the two middle specimens; a specimen at each side, but not in fruit, is *Pterogonium intricatum*, but this is not figured.

19, H. *commutatum*, Hedw. (all of them, certainly.)

20, A, only is *Hypnum molluscum*, Hedw.; with it, but not figured, is *H. cristacastrensis*, Linn., " ab Hallero." B. The upper specimen, from Virginia, is *H. cupressiforme*, Linn., the lower is *H. aduncum*, Linn., and by its side *H. uncinatum*, Hedw.; of these, the figure B, seems to have been taken from that of *H. uncinatum*.

21, H. *filicinum*, Linn.

22, H. *cupressiforme* Linn. β., all the specimens.

11, H. *undulatum*, Linn.

12, Neckera *crispa*, Hedw.

TAB. XXXVII. *f.* 23, Hypnum *cupressiforme*, α., Linn.

24, A. B. D. Hypnum *rugulosum*, Web. et Mohr (from Gissa). C. H. *aduncum*, Linn. var. *rugosum*.

25, H. *scorpioides*, Linn.

26, H. *aduncum*, Linn.

27, A. H. *palustre*, Linn.

B. H. *medium*, Dicks.

TAB. XXXVIII. *f.* 28, H. *triquetrum*, Linn.

29, H. *rutabulum*, Linn.

30, A. H. *confertum*, Dicks.; but the figure is very bad, if indeed it has not been taken from a small specimen of B.

B. H. *striatum*, Schreb.

31, A. B. H. *ruscifolium*, Neck.

C, from Patagonia, and something new. There are two specimens; the one in fruit has no nerve to the leaf, the other has a nerve, but is not in fruit,—both are evidently *Hypna*.

32, H. *ruscifolium*, Neck.

33, H. *fluitans*, Linn.

36, Bartramia *arcuata*, Brid.

TAB. XXXIX. *f.* 34, Hypnum *cuspidatum*, Linn.

35, H. *stellatum*, Schreb. A specimen in the herbarium, neither described nor figured, given by Mr. Harrison, is *Bryum* (Paludella) *squarrosum*, Linn.

37, H. *nitens*, Schreb.

38, H. *loreum*, Linn. (not *H. squarrosum*, to which it is constantly referred.)

39, H. *squarrosum*, Linn.

Tab. XXXIX. *f.* 40, H. *loreum*, Linn.

41, Astrodontium *Canariense*, Schwaegr.

42, No specimen in the herbarium; for it the figure is substituted; it is, however, evidently *Anomodon viticulosus*, Hook. et Taylor, a large specimen.

43, Anomodon (Neckera) *viticulosus*, Hook. et Taylor.

44, A. B. C. Hypnum *ruscifolium*, Neck.—D. *H. palustre*, Linn.—E. *H. riparium*, Linn.

45, H. *purum*, Linn.

46, A. and B. are *Hypnum purum*; var. C. is copied from Vaillant, and, according to his herbarium, is *H. illecebrum*, Schw.; but Dillenius having received a plant from North America, which he thought the same, has substituted it in his herbarium for C., and of this he has only represented the seta and capsule, *a*, *b*.

47, H. *Schreberi*, Willd.

48, H. *dendroides*, Linn.

49, H. *alopecurum*, Linn.

50, H. *curvatum*, Sw.

51, H. *myosuroides*, Linn.

52, H. *murale*, Hedw.

53, H. *cupressiforme*, Linn.

54, Leucodon *sciuroides*, Schwaegr.

55, Pterogonium *gracile*, Hedw.

56, Pterogonium *julaceum*, Hedw.

57, Neckera *Seductrix*, Hedw.

58, Pterogonium *hirtellum*, Hedw.

Tab. XLII. *f.* 59, Hypnum *sericeum*, Linn.

60, H. *lutescens*, Dicks.

61, H. *velutinum*, Linn.

62, H. *cupressiforme*, Linn., var. *polyanthos*.

63, H. *albicans*, Neck.

64, H. *serpens*, Linn.

65, Left-hand specimen, which is the one figured, is *Hypnum medium*, Dicks. The Pennsylvanian one, of a yellowish-green colour, is *Pterogonium intricatum*, Hedw.

66, H. *attenuatum*, Schreb., from Gissa: the leaves narrower than usual.

Tab. XLIII. *f.* 67, resembles a small and narrow state of *H. atrovirens*, Dicks.; but is marked "from Patagonia," and is surely a new species.

68, H. *spiniforme*, Linn.

69, Anomodon *curtipendulus*, Hook. et Taylor. The specimen stated to be from Patagonia, is, however, the North American *Pterogonium julaceum*, noticed in the description, but not figured.

70, Hedwigia *aquatica*, Hedw. (not in herb.)

71, Encalypta *streptocarpa*, Hedw.

72, Azolla *Magellanica*, Lam. (not in herb.)

73, Hypnum *tetragonum*, Sw. (not in herb.)

74, Neckera *trichophylla*, sec. Hedw. (not in herb.), but, according to Dillenius's observations, a mere *var.* of *H. tetragonum*: in his herbarium, however, is a plant marked "an 74?"—it is *H. nigrescens*.

75,—Dillenius thinks this a compound of the two last.—(74 and 75 are not figured by Dillenius.)

Tab. XLIV. *f.* 1, Bartramia *pomiformis*, Hedw.
2, B. *fontana*, Sw.
3, Splachnum *ampullaceum*, Linn.
4, S. *sphæricum*, Linn.
5, S. *mnioides*, Linn.—β., Hook.
6, Gymnostomum *pyriforme*, Hedw.

Tab. XLV. *f.* 7, a–e. G. *Wilsoni*, Hook.
f–k. G. *truncatulum*, Hoffm.
8, Encalypta *vulgaris*, Hedw.
9, E. *ciliata*, Hedw.
10, Tortula *subulata*, Hedw.
11, Bryum *heterostichum*, Arn.; *Arrhenopterum heterostichum*, auct.

TAB. XLV. *f.* 12, Tortula *ruralis*, Hedw.

13, T. *ericetorum*, Sm. This is marked "Patagonia," and appears to be *Trichostomum Barbula*, Schw., as to the specimen in fruit: another specimen is barren, and quite different, nor referable to any thing that we recollect.

14, A–E. T. *muralis*, Hedw. F. and G. seem to have been copied from Vaillant, and probably represent *T. revoluta*, Brid.; but the specimens in the herbarium are from America, and are *T. cæspitosa*, Hook. et Grev.

15, T. *cuneifolia*, Sm.

TAB. XLVI. *f.* 16, A. B. C. (Right-hand specimen), E–H. all *Dicranum scoparium*, Hedw.

C. Left-hand specimen, not figured by Dillenius, nor described, but marked "foliis undulatis," is *Dicranum undulatum*, Ehrh.

D. Dicranum *scoparium*, var. *majus.*

17, The plant from Gissa, figured with upright capsules, is not in the herbarium, but appears to be certainly *Bryum crudum*, Huds. In the herbarium there is a plant marked "an 17?" without fruit, which is probably *Bryum turbinatum.*

18, Polytrichum *undulatum*, Hedw.
19, P. *angustatum*, Brid.
20, Dicranum *glaucum*, Hedw.
21, Octoblepharum *albidum*, Hedw.
22, Dicranum *candidum*, Schw. Figure good.
23, D. *pellucidum*, Sw.
24, D. *squarrosum*, Schrad.
25, Trichostomum *aciculare*, Beauv.

26, A. T. *aciculare*, *var.* with narrow leaves; *T. aquaticum*, auct.

B. T. *aciculare.*

C. T. *fasciculare*, Schrad. (specimen from Haller).

TAB. XLVII. *f.* 27, A. F. G. T. *heterostichum*, Hedw.

B. C. D. E. T. *canescens*, Hedw.

TAB. XLVII. *f.* 29, T. *microcarpum*, Hedw.
30, T. *patens*, Schwaegr.
31, T. *canescens*, var.
32, T. *lanuginosum*, Hedw.
33, All in the herbarium is *Dicranum flexuosum*, Hedw., except some specimens from Haller (not noticed in the *Hist. Musc.*), which are *Didymodon longirostre*, Starke.
34, Weissia *acuta*, Hedw.
35, W. *verticillata*, Schwaegr.
36, Gymnostomum *curvirostrum*, Hedw. (not *G. æstivum*, as in *Musc. Brit.*)
37, Dicranum *heteromallum*, Hedw.
38, D. *heteromallum*, var.
39, Didymodon *trifarium*, Sw.

TAB. XLVIII. *f.* 40, Tortula *tortuosa*, Hedw.
41, Trichostomum *polyphyllum*, Scwhaegr.
42, Weissia *cirrhata*, Hedw.
43, W. *controversa*, Hedw.; but with it are mixed in the herbarium some specimens of *W. cirrhata*.
44, Tortula *convoluta*, Sw.
45, Weissia *curvirostra*, Hook. et Taylor.
46, Tortula *fallax*, Sw.
47, T. *unguiculata*, Hook. et Taylor.
48, T. *unguiculata*, Hook. et Taylor.
49, T. *unguiculata*, Hook. et Taylor.

TAB. XLIX. *f.* 50, 51, 52, } Didymodon *purpureum*, Hook. et Taylor.
53, Weissia *recurvata*, Hook. et Taylor.
54, Didymodon *purpureum*, Hook. et Taylor,—var.
55, Tortula *enervis*, Hook. et Taylor.
56, T. *cæspitosa*, Hook. et Grev.
57, Didymodon *pallidus*, Beauv.
58, Bryum *trichodes*, Linn.

TAB. L. *f.* 59, Dicranum *varium*, Hedw., as to the English and Swiss specimens and the figure; but there are two specimens from Gissa, constituting the synonym, (*p.* 391,) which are *D. crispum*, Hedw.?

60, Bryum *pyriforme*, Sw.

61, A. B. C. D. F. G. B. *nutans*, Schreb.

61, E. B. *elongatum*, Dicks.; specimen from Wales.

62, B. *argenteum*, Linn.

63, B. *julaceum*, Schrad.; mixed with it are *B. nutans*, Schreb., and *B. cæspititium*, Linn. It is difficult to say, from the herbarium, to which the figure refers; but, if we may form a conjecture, I would refer the Oxford plants, or *Bryum cæspititium*, to A. (with its magnified copy E.), B. C. and the Gissa one, or *B. julaceum*, to D.

64, B. *alpinum*, Linn.

65, Grimmia *pulvinata*, Sm., except "*var.* c." of the herbarium, corresponding to D. E. of the *Hist. Musc.*, which is *Grimmia ovata*, Web. et Mohr.

66, A-E. Bryum *nutans*, Schreb.

66, F. G. B. *cæspititium*, Linn. var.

66, H. B. *turbinatum*, Sw.

67, B. *capillare*, Linn. (all of them.)

68, B. *nutans*, Schreb.

69, B. *carneum*, Linn.

TAB. LI. *f.* 70, B. *crudum*, Huds.

71, B. *hornum*, Schreb.

72, B. *ventricosum*, Dicks.

73, B. *ventricosum*, Dicks.

74, B. *turbinatum*, Sw.

TAB. LII. *f.* 75, Funaria *hygrometrica*, Hedw.

76, Bryum *ligulatum*, Schreb.

77, B. *roseum*, Schreb.

78, B. *stellare*, Roth.—Sm. *Flora Brit.* (excl. syn. plerisque,) not of *Engl. Bot.* (which is a *var.* of *B. capillare.*) Dillenius's specimens are all foreign, nor has the true plant been yet found in Britain.

TAB. LIII. *f.* 79, A-L. B. (Mnium) *cuspidatum*, Schreb.

Tab. LIII. *f.* 79, Bryum (Mnium) *affine*, Brid., specimens sent by Vaillant.
81, B. *punctatum*, Schreb.
Tab. LIV. *f.* 1, Polytrichum *commune*, Linn.
2, P. *juniperinum*, Willd.
3, P. *piliferum*, Schreb.
Tab. LV. *f.* 4, P. *alpinum*, Linn.
5, P. *urnigerum*, Menz.
6, P. *nanum*, Hedw.
7, P. *aloides*, Hedw.
8, Orthotrichum *striatum*, Hedw.; all but one specimen, which is *O. affine*, Schreb.
9, O. *anomalum*, Hedw.
10, O. *striatum*, Hedw.
11, O. *crispum*, Hedw.
12, Polytrichum *Pennsylvanicum*, Hedw.
Tab. LXVIII. *f.* 5, Buxbaumia *aphylla*, Linn.
Tab. LXXIII. *f.* 39, Andræa *alpina*, Hedw.
40, A. *Rothii*, Mohr.
Tab. LXXXIII. *f.* 6, Hypnum *proliferum*, Linn. var.
7, H. *fluitans*, Linn.
8, Dicranum *glaucum*, Hedw. from N. America.
9, Splachnum *rubrum*, Hedw.
Tab. LXXXV. *f.* 15, S. *angustatum*, Linn.; figure bad.
16, Among specimens of *Jungermannia dilatata*, Linn. is apparently a *Pterogonium*, but neither is in fruit. The moss is of a yellowish-brown colour, the branches julaceous; and, as far as we can judge without the fruit, is *Pterogonium repens* Brid.; what Dillenius saw and figured for fruit, are what some Botanists consider male flowers.
17, Drummondia *clavellata*, Hook.,[*] in Drummond's *Musci Americani.*
18, Pterogonium *trichomitrion*, Brid.
19, Bryum *heterostichum*, Arn.
20, Hypnum *ruscifolium*, Linn.; a lax variety, with the leaves rather sharper than in the usual taste of the plant.—From walls.

OBSERVATIONS ON SOME OF THE CLASSICAL PLANTS OF SICILY.*

BY JOHN HOGG, ESQ., M.A., F.L.S., M.R.G.S., F.C.P.S., &c.

DURING a tour I made in Sicily, in the spring of 1826, I noted down most of the plants which I collected, not only of those which are indigenous, but also of those which, by long cultivation, are now perfectly naturalized. Since the recent appearance of two Sicilian Floras, one by Dr. *Presl*,† and the other by Dr. *Gussone*,‡ it would be superfluous to add in this paper more observations from my catalogue, than what refer to the Classical Plants, which do not grow naturally in Great Britain.

These rough notes, therefore, I beg to lay before my readers, with the hope that they may call the attention of some more able scholar and botanist to the same very entertaining and useful subject, and that a complete *Classical Flora*§ may ultimately be given to Literature and to Science.

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* This paper was read before the Linnean Society of London, November 2d, November 16th, and December 21st, 1830:—the Cambridge Philosophical Society, May, 1832:—and the Natural History Society of Northumberland, Durham, and Newcastle-on-Tyne, October 15th, and November 19th, 1832.

† *Presl, Carol. B.*—Flora Sicula, exhibens Plantas Vasculosas in Siciliâ aut spontè crescentes aut frequentissimè cultas, secundùm Systemâ Naturale digestas.—*Pragæ.* 1826.—The first volume has only been published.

‡ *Gussone, Joanne.* Floræ Siculæ Prodromus, Sive Plantarum in Siciliâ, Ulterori nascentium Enumeratio, secundùm Systema Linnæanum. *Naples.* 1 vol. 1827.—This work cannot yet be obtained in England; and of it the 1*st. Vol.* alone has appeared.—(J. H. 1832.)

§ Some time after this paper was written, I met with a foreign book, intitled, "*Flora Classica.*—Herausgegeben von Dr. *Julius Billerbeck* in Hildesheim."—Leipzig, 1824.—The work is published in one vol. 8vo., and composed partly in German, and partly in Latin; it is carefully done, and contains much valuable information.

It has been a matter of curiosity, and an amusement to me, to endeavour to identify some of the Sicilian plants with the ancient descriptions of Theophrastus, of Dioscorides,* and occasionally of Pliny; and also of the two Syracusan poets, Theocritus and Moschus; and wherever I was able, I have given the modern Greek names, according to Dr. *Sibthorp*, and references to the beautiful plates in the Flora Græca. A few notes and quotations from other Classical Authors are, now and then, interspersed, as they occurred to my memory at the time, for the sake of elucidating some property or use of the plants. This I was induced to do, since Greek was, for a long period, the prevailing language in Sicily; and so many of the plants of Greece are common to that island. A vast number of the Grecian plants retain at present their ancient names, more or less corrupted.

Dr. *Sibthorp* observes, in describing his ascent of Parnassus,—"after dinner I walked out with a shepherd's boy to herborize; my pastoral botanist surprised me not a little with his nomenclature; I traced the names of Dioscorides and Theophrastus, corrupted indeed, in some degree, by pronunciation, and by the long '*series annorum*' which had elapsed since the time of these philosophers; but many of them were unmutilated, and their virtues faithfully handed down in the oral traditions of the country."

The first great step towards distinguishing and knowing the plants of the ancients with any certainty, is, to obtain the Romaic, or Modern-Greek names, and then to compare them with their old descriptions; often, however, these are so brief, that they can be applied to several different plants; which, of course, makes the attempt somewhat vague and unsatisfactory.

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* The editions to which I have referred, are—*Dioscorides* Libri Octo. Edit. Birkmann. Parisiis, 8vo., 1549.—*Theophrasti* Opera. Edit. Heinsius.—Lugd. Bat. fol. 1613.—Illustrationes Theophrasti. Auctor J. *Stackhouse*. Oxon. 8vo., 1811.

Although Dr. *Sibthorp* has already thrown considerable light on the subject, yet much more is required to be done; and I wish that future travellers in Greece would pay particular attention to this interesting topic.

Few islands in Europe possess a more choice and beautiful collection of plants than Sicily; its Flora, from the situation of the island,* contains species which are common to Italy, Illyria, Dalmatia, the south of France, Corsica, Sardinia, the Balearic Isles, Spain, Portugal, Madeira, the North of Africa, Palestine, Syria, Turkey, Tartarian Caucasus, Greece, the Islands of the Archipelago, and the Ionian Isles. There are many, also, which are natives of Britain, and of the more northern parts of Europe.

Vegetation being naturally quick, by the effect of a powerful sun, if justice were done to the land, and a skilful system practised in husbandry and gardening, we might almost ascribe to it the words of Hesiod. (Op. et dies. v. 172.)

———————— *μελιηδέα καρπὸν*
Τρὶς ἔτεος θάλλοντα φέρει ζείδωρος ἄρουρα.

Sicily, in a botanical point of view, far exceeds most countries in Europe, in the number and beauty of its native flowers; many species I had only before seen cultivated in gardens, and was charmed at finding them growing wild and in abundance. In consequence of the warm genial climate, some plants produce a succession of blossoms the whole year; therefore, the following description of the famous meadows of Enna, may, perhaps, not improperly be applied to the Flora of the island;—*τὰ δὲ ἴα, καὶ τῶν ἄλλων ἀνθῶν τὰ παρεχόμενα τὴν εὐωδίαν, παραδόξως δι' ὅλου τοῦ ἐνιαυτοῦ παραμένειν θάλλοντα, καὶ τὴν ὅλην πρόσοψιν ἀνθηρὰν καὶ ἐπιτερπῆ παρεχόμενα.*—(*Diodorus Sic.* Bib. Hist. lib. v. cap. 3.)—And in conclusion, I will only add the words of *Cicero*, which he used in describing the same lovely spot. "Sunt plurimi et lætissimi flores omni tempore anni."

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* For a brief account of the Geography, Geology, and Vegetation of Sicily, by the Author, see *Loudon's* Magazine of Natural History, vol. iii. pp. 105—116.

CLASS I. DICOTYLEDONES.

RANUNCULACEÆ.

1. **Atragene** cirrhosa, *Pers.* (Clematis cirrosa, *Sibth.*) Tendriled Atragene.—*Fl. Græc. vol.* vi. *t.* 517.—*Bot. Mag. vol.* xxvii. *t.* 1070. Κληματῖτις. *Diosc. lib.* ii. *cap.* 182. according to *Dr. Sibthorp.*—Common in the south of Sicily; creeping up trees and hedges.

2. Anemone coronaria—Large-flowered Anemone.—*Fl. Græc. v.* vi. *t.* 514. Ἀνεμώνη ἥμερος, *Diosc. lib.* ii. *cap.* 207. (*Fl. Græc.*) Now called παπαρούνα in Greece.—*Sibth.*—On Monte Cucio near Palermo. *Presl.*

3. A. hortensis, *Lin.* (A. stellata, *Lam.*) Garden anemone.—*Fl. Græc. vol.* vi. *t.* 515. *Bot. Mag. vol.* vi. *t.* 123. Ἀνεμώνη ἀγρία, *Diosc. lib.* ii. *cap.* 207. (*Fl. Græc.*) Αγριο παπαρούνα, hodié (*Sibth.*)—Ἀνεμώνη. *Theoph. lib.* vii. *cap.* 8.?—The tears of Venus gave birth to the Anemone, τὰ δὲ δάκρυα τὰν Ἀνεμώναν. *Bion. Idyl.* i. *v.* 66.—Theocritus mentions the Ἀνεμώνα, *Idyl.* v. *v.* 92.; and the word occurs in Moschus, *Idyl.* iii. *v.* 5. This species is frequent in meadows and hedges in Sicily.

4. Ranunculus muricatus.—Rough-seeded Crowfoot.—*Fl. Græc. v.* vi. *t.* 522.—Βατράχιον τρίτον, *Diosc. lib.* ii. *cap.* 206. (*Fl. Græc.*)—Now called Σπουρδοκοχύλα, by the modern Greeks. (*Sibth.*).—In wet places and rivulets near Palermo; at Cephaloëdi, &c., *Presl.*

5. Delphinium peregrinum.—Foreign Larkspur.—*Fl. Græc. v.* vi. *t.* 506.—Δελφίνιον, *Diosc. lib.* iii. *cap.* 84.—Dioscorides relates that the Delphinium was so named from its leaves being of the form of Dolphins;—φυλλάρια δελφινοειδῆ, ὅθεν καὶ ὠνόμασαι.—A common species in the Sicilian corn-fields.

6. D. Staphysagria.—Palmated Larkspur, or Stavesacre. *Fl. Græc. v.* vi. *t.* 508.—Σταφὶς ἀγρία, *Diosc. lib.* iv. *cap.* 156. Now called in Zacynthus, Αγριο σαφίδα. *Sibth.*—An old medicinal plant.—In uncultivated places near Catania.

7. D. pubescens, *De C.* (D. consolida, *Var. Smith.*) Pubes-

cent, Larkspur.—*Fl. Græc. vol.* vi. *t.* 504. Δελφίνιον ἕτερον, *Diosc. lib.* iii. *cap.* 85., where it is stated that it was called also ὑάκινθος, and by the Romans βουκίνους. Now named in Zacynthus, Αγριο λιναρω του βουνου.—(*Sibth.*).—The plant, so beautifully figured in the Flora Græca, represents, according to Sir James E. Smith, a luxuriant variety of *D. Consolida*, which Professor De Candolle (*Syst. Nat. v.* i. *p.* 343.) considers a distinct species. He also supposes *Delphinium Ajacis* to be the Hyacinthus of Theocritus and Ovid; of which he says,—“ Petala alba inter se coalita notata sunt ad latus superius lineis nonnullis atro-purpureis, quæ Ajacis litteras primas Græcè scriptas olim in Poetarum mentem revocaverunt. Videtur ergò hæc species Hyacinthus Theocriti, et Ovidii, de quibus Ovidius :—

> “ Ipse suos gemitus foliis inscribit et AI AI
> Flos habet inscriptum funestaque littera ducta est :”—

Et Theocritus (*Moschus?*) interprete Eobano Basso;—

> “ Nunc Hyacinthe sonet tua littera scilicet AI AI.”—

Hab. in Tauriâ (*Pall.*) ; nunc ex hortis indigena in Helvetiâ (*Hall.*) facta.”—*p.* 342.

Since the *Delphinium Ajacis* is not indigenous in Greece, Sicily, or Italy, this species (*D. pubescens*) which is not unfrequent in all those parts of Europe, may with more probability be identified with the ancient and poetical Hyacinthus. —The figures *b.* B. of *tab.* 504, *Fl. Græca*, show the dark marks on the nectary of *D. pubescens*, both in their natural size, and magnified; they are thus described,—“ Nectarii labium superius intus ad basin litteris tribus nigris notatum, ut ferè in Delphinio Ajacis.”—

These letter-like lines in some degree resemble the Greek AI AI, alas! alas! and a part of the word AIAΣ, or as it may be written AIA[, Ajax.—Hence Moschus, *Idyl.* iii. *v.* 6,—

> Νῦν ὑάκινθε λάλει τὰ σὰ γράμματα, καὶ πλέον AI AI
> Βάμβαλε σοῖς πετάλοισι, καλὸς τέθνακε μελικτάς.—

The flowers vary much in colour; they are blue, violet, pink, red, or purple, and in this respect the following passages prove the two flowers to correspond. Theocritus has, *Idyl.* x. *v.* 28,

Καὶ τὸ ἴον μέλαν ἐντὶ, καὶ ἁ γραπτὰ Ὑάκινθος.—

Virgil says,—Suavè *rubens* Hyacinthus (*Ec.* iii. *v.* 63.)
and,—*ferrugineos* Hyacinthos (*Georg.* iv. *v.* 183.)
Ovid describes it as purple,—

————————Tyrioque nitentior Ostro. (*Met.* x. *v.* 211.)—
————Rubefactaque sanguine tellus
Purpureum viridi genuit de cespite florem. (*Met.* xiii. *v.* 395.)

But the great objection to referring this Hyacinth to a species of Delphinium is, that Ovid describes the former to be of the *same shape* as that of a white Lily,—

Flos oritur, *formamque* capit, *quam Lilia;* si non
Purpureus color huic, *argenteus* esset in illis.—(*Met.* x. *v.* 212).

I do not know that there is in Europe any native Liliaceous plant with lettered flowers; nor that there exists any other species whose petals bear the dark lines, which so strongly resemble AI AI, and AIA[except the *Delphinium Ajacis,* and *D. Pubescens;* but the first not being indigenous in Greece, Italy, and Sicily; the second will therefore with greater reason answer to the Hyacinthus of Ovid and Virgil and to the Ὑάκινθος of Theocritus and Moschus. Dioscorides likewise having mentioned that the Δελφίνιον ἕτερον was named by some ὑάκινθος, greatly confirms this supposition.

It is singular that among the synonyma of *D. pubescens* are, *Consolida regalis, C. regia,* and *Flos regius;* so also Virgil—

————————Inscripti nomina *Regûm*
Nascantur *flores.*———

The lettered Hyacinth, Ἁ γραπτὰ Ὑάκινθος, (*Theoc.*), the Royal flower, or King-flower, had not, strictly speaking, the *names* of *Kings* inscribed on it; but a part of the name of a son of a king, Ajax the son of Telemon, and the exclamations of lamentation uttered by Apollo for the death of Hyacinthus, the son of king Amyclas. This is well explained in the following lines from Ovid:—

> Litera communis mediis pueroque, viroque
> Inscripta est foliis; hæc nominis, illa querelæ. (*Met.* xiii. *v.* 397.)—
>
> Flosque novus scripto gemitus imitabere nostros
> Tempus et illud erit, quo se fortissimus heros,
> Addat in hunc florem, folioque legatur eodem. (*Met.* x. *v.* 206.)

Pliny gives this account of the fable.—"Hyacinthum comitatur fabula duplex, luctum præferens ejus quem Apollo dilexerat, aut ex Ajacis cruore editi, ità discurrentibus venis, ut Græcarum literarum figura AI legatur inscripta." (*Nat. Hist. lib.* xxi. *cap.* 11.)

PAPAVERACEÆ.

8. Hypecoum procumbens.—Procumbent Hypecoum. *Fl. Græc. vol.* ii. *t.* 155. Ὑπήκοον, *Diosc. lib.* iv. *cap.* 68. secundùm Floram Græcam.—

In sandy fields at Ficarazzi, and Trabia, not far from Palermo. (*Presl.*)

CRUCIFERÆ.

9. Brassica Cretica.—Cretan Cabbage. Ῥάφανος ἀγρία, *Theoph. lib.* vii. *cap.* 4. according to *Sprengel*; but *Stackhouse* refers it to *B. Arvensis.*

CAPPARIDEÆ.

10. Capparis spinosa. Prickly Caper-bush.—*Fl. Græc. vol.* v. *tab.* 486.—Κάππαρις ἀκανθώδης, *Diosc. lib.* ii. *cap.* 204. and *Theoph. lib.* vi. *cap.* 1.—Now called Καππαριὰ, and κάππαρις. *Sibth.*

The Caper-bush, *Capperu*, adorns rocks, walls, and stony places with its large handsome white flowers.

CISTINEÆ.

11. Cistus salvifolius.—Sage-leaved Rock-Rose.—*Fl. Græc. vol.* v. *t.* 497.—Κίστος θῆλυς *Diosc. lib.* i. *cap.* 127.—*Sibth.*—Now

called in Greece κισάρι, κουνουκλιὰ, ἢ ἄγριο φασκομηλιὰ *Sibth.* The most common Cistus in Sicily.

12. C. Incanus.—Hoary Rock-Rose.—*Fl. Græc. vol.* v. *tab.* 494. The large rose-coloured flowers of this species would induce me to refer the ῥοδόκισσος, or ῥοδόκιστος of Theocritus, *Idyl.* v. *v.* 131, to it.

It is found near Trapani and Cefalu.—*Presl.*

MALVACEÆ.

13. Althæa cannabina.—Hemp-leaves Marsh-Mallow. This plant seems perfectly to agree with Κάνναβις ἀγρία, *Diosc. lib.* iii. *cap.* 166:—the leaves of which are like the hemp, and the bark fit for making ropes.

AURANTIACEÆ.

14. Citrus medica.—Common Citron.

Μηλέα Μηδικὴ, *Theoph. lib.* i. *cap.* 22. The fruit, Dioscorides calls μῆλα Μηδικὰ, ἢ Κεδρόμηλα ; but by the Romans Κίτρια —*lib.* i. *cap.* 166.—The great fertility of this tree is mentioned by most ancient writers.—Theophrastus says,—πᾶσαν ὥραν βλαστάνει τὶ καὶ ἀνθεῖ καὶ καρποτοκεῖ.—*De Caus. Plant. lib.* i. *cap.* 11.—Dioscorides describes it thus—φυτὸν γάρ ἐστι καρποφοροῦν δι ὅλου του ἔτους ἐπαλλήλως.—Pliny states the same,—arbor ipsa omnibus horis pomifera est, aliis cadentibus, aliis maturescentibus, aliis verò subnascentibus.—*lib.* xii. *cap.* 3.—Virgil signifies the Citron in the following words,—

> Media fert tristes succos tardumque saporem
> Felicis Mali.——

Presl. describes four varieties of Citron, *Citru, o Cedru,* which are cultivated in Sicily.—Also many sorts of Lemons and Limes, in Sicilian, *Lumiuni, o Lumin celle,* both with a sweet and sour pulp, are grown.—Many thousand chests of oranges, lemons, and citrons, are annually exported from Messina and Palermo. Likewise much Lemon juice.—The best punch and lemonade are made with the Palermitan and

Roman lemons; by using the juice of the one, and the peel of the other.

15. C. Aurantium.—Orange.

Μηλέα περσικὴ *Theoph. lib.* iv. *cap.* 4.—Oranges are called περσικὰ μῆλα by Dioscorides, *lib.* i. *cap.* 165. According to Dr. *Presl*, there are fourteen varieties cultivated in Sicily. That named *Aranciu di Malta, o Aranciu Sanguignu*, the blood-red, or Malta Orange, is one of the best and of the sweetest flavour.—Every variety of these species of Citrus grows in perfect luxuriance in the island, and the exquisite perfume of their flowers carried by the evening zephyr, is most odorous, and most grateful.

ACERINEÆ.

16. Acer Creticum.—Cretan Maple.

Σφένδαμνος. *Theoph. lib.* iii. *cap.* 4. apud *Sprengelium*, sed *Stackhousia*. A. campestre intelligitur.

In Siciliâ arbor pulchra et satis grandis.

AMPELIDEÆ.

17. Vitis vinifera.—Common Grape Vine.—*Fl. Græc. vol.* iii. *tab.* 242

Ἄμπελος οἰνοφόρος. *Diosc. lib.* v. *cap.* 1.—ἄμπελος ἡμερὴ, Theophrasti. Ἄμπελος ἁ γλυκύκαρπος. *Theocrit. Idyl.* xi. *v.* 46, and ἄμπελος βοτρυόπαις. *Theoc. Epigram.* iv. *v.* 8. The carrying bunches of grapes supported on boughs of the Vine—ὀσχοφόρια,—was an Athenian festival, concerning which, see Plutarch's life of Theseus.

Grapes, figs, apples, pomegranates, olives, gourds, melons, cones of the Stone Pine, and ears of wheat, with the leaves and boughs of the Vine and Ivy, elegantly entwined, form the usual groups of fruit in the antique sculptures of the Greeks.

Presl describes forty-four varieties of the vine (*La Vigna*), which are cultivated in Sicily. They afford many sorts of delicious wines.—The best are from Messina, Bronte, Catanea, Etna, Augusta, Syracuse, Girgenti, Marsala, Castelvetrano, Castel á mare, and Melazzo—Mount Etna also produces a vast quantity of wine; the last vineyards I observed in ascending the mountain, were near San Niccolo dell' arena, a convent distant about thirteen miles from Catania, and at an elevation of 2449 feet above the sea, according to Captain *Smyth's* survey. The wines of Etna, Catania, Augusta, and Syracuse are the strongest, and most esteemed; of these Albarello, Calabrese, Capriata, Guarnaccia, Malvasia, Moscadello, and Terriforti, are in all probability superior in flavour to any of the ancient Sicilian wines, which have been extolled by the classical writers.

I did not learn that the Corinthian Vine (*Currant*), V. corianthiaca, was cultivated in Sicily; although it is grown abundantly on the adjacent island of Lipari, where it is called *Passolina.*

18. Vitis—*Var.* sylvestris.—Wild Vine.

Ἄμπελος ἀγρία. *Diosc. lib.* v. *cap.* 2.—also Theophrastus, Κλῆμα, ἢ Ἀγριάμπελος. hodiè (*Sibthorp*).

Common in uncultivated and wild places, climbing gracefully about trees and bushes.—The wild grapes are sometimes named by the Sicilian peasantry, *Labrusce.*

ZYGOPHYLLEÆ.

19. Tribulus terrestris.—Ground Caltrops.—*Fl. Græc. vol.* iv. *tab.* 372.

Τρίβολος ὁ χερσαῖος. *Diosc. lib.* iv. *cap.* 15.—Τρίβολος. *Theoph. lib.* vi. *cap.* 1.—Τριβόλι, hodiè secundùm *Sibthorpium.*

In sandy fields near the sea-coast.—*Presl.*

RHAMNEÆ.

20. Rhamnus Alaternus—Common Alaternus.

Ἀφάρκη, *Theoph. lib.* i. *cap.* 15, is supposed by *Stackhouse* to be this plant.—Others refer it to the φιλύκη. *Theoph. lib.* i. *cap.* 15, which is now named in Greece κιτρινόξυλον.—*Sibth.*

21. R. Lotus, *Pers.* (Zizyphus Lotus,) Barbary Buck-Thorn.

Sprengel considers this species the Λωτὸς τὸ δένδρον. *Diosc. lib.* i. *cap.* 172, which is described as εὐμέγεθες, *very large*, and therefore, cannot, I think, agree with this Buck-Thorn, which is only a moderate-sized shrub. *Park* and *Desfontaines* also suppose it to be the true Lotus of the Lotophagi.—See Flora Atlantica, and Acad. Paris. Act. 1788. Consult Celtis Australis, infrà. No. 126.

Near Palermo, on Monte Pellegrino; but scarcely indigenous. (*Bivona.*)

22. Rhamnus Zizyphus, *Pers.* (Zizyphus vulgaris, *Lam.*) Common Jujube.—*Fl. Græc. vol.* iii. *t.* 241.

According to the Flora Græca this is the παλίουρος. *Diosc. lib.* i. *cap.* 122, and *Theoph. lib.* i. *cap.* 16.—It is now called τζίντζιφον, ἢ ζίζιφι.—*Sibth.* Ray observed this species growing wild in great abundance in Calabria. The cultivated kind bears an oval, sweet fruit, about the size of a plum. The juice is taken medicinally.

23. R. Paliurus, *Pers.* (Paliurus aculeatus, *Lam.*) Prickly Paliurus, or Christ's Thorn.—*Fl. Græc. vol.* iii. *tab.* 240.

Ῥάμνος τρίτη.—*Diosc. lib.* i. *cap.* 120. Secundùm *Floram Græcam.* But I would consider this plant the παλίουρος of Dioscorides and Theophrastus; since, in Modern Greece, it retains its ancient name slightly altered ἀπαλιύρι.—*Sibth.* *Stackhouse* has referred R. Spina Christi, and R. Paliurus to παλίουρος of Theophrastus. In the 24th Idyl of Theocritus, Tiresias commands Alcmena to prepare a fire of dry wood, cut from different wild shrubs, one of which is the παλίουρος, and to burn in it the two snakes which the infant Hercules had strangled.—See v. 86—90. Dioscorides also says the seeds, leaves, and root of the Paliurus were good against the poison and bite of serpents.

This very thorny plant, with its singular membranaceous winged seed-vessels, is common in hedges.

TEREBINTHACEÆ.

24. Pistacia vera.—True Pistachio.

In Sicilian, *Il Pistacchiu.* The nuts πιϛάκια.—*Diosc. lib.* i.

cap. 178, are used in ices, creams, conserves, and all kinds of *bonbons* and confectionary.

25. P. Lentiscus.—Mastick.—*Bot. Mag. vol.* xlv. *tab.* 1967. Σχῖνος δένδρον.—*Diosc. lib.* i. *cap.* 90. Σχῖνος.—*Theoph. lib.* ix. *cap.* 1. Σχίνο. Græc. hodiern.—*Sibth.* The word σχινίζομαι, means, to eat mastick for the purpose of cleaning the teeth. The resin or gum mastic is obtained by making incisions in the bark, from which it exudes in drops, or tears—δάκρυα (apud Theoph. loco cit.) and soon concretes by the heat of the sun. The purest is imported from the island of Scio. The Turkish *belles* keep up the ancient custom of chewing it in order to preserve the gums, clear the teeth, and give an aromatic flavour to the breath. Martial (*Epigram. lib.* iii.) mentions mastic tooth-picks, cuspides lentisci. The gum is called by Dioscorides (*lib.* i. *cap.* 91.)—ῥητίνη σχινίνη, ἢ μαστίχη. Lho also confirms that it was used for a dentifrice,—μίγνυται δὲ καὶ σμήγμασιν ὀδόντων ;—being chewed it gives a sweet scent to the breath—στόματός τε εὐωδιάν ποιεῖ διαμασσωμένη.—The best came from the Isle of Chios (now *Scio ;* both names very probably are corrupted from σχῖνος), and in the greatest quantity,—γεννᾶται δὲ καὶ καλλίστη καὶ πλειστή ἐν Χίῳ τῇ νήσῳ. According to *Husselquist*, the gum is still named μαςικὰ by the Modern Greeks. In Sicilian, the gum is called *Mastice ;* but an oil is made from the berries, which is named *Oliu di Lestincu :* it is procured by boiling the berries (Σχινιδες. *Hippocr.*) in water, and the oily matter skimmed off the surface. This oil was used by the ancients; and obtained in the same way.—Dioscorides (*lib.* i. *cap.* 51.) calls it ἔλαιον σχίνινον, Σχινέλαιον.—Diodorus Siculus (*Hist. lib.* v. *cap* 17.) likewise relates, that the inhabitants of the neighbouring Balearic Isles used it. Another sort of oil was prepared from the mastick itself, which is the ἔλαιον μαστίχινον, ἢ μαστιχέλαιον.—*Diosc. cap.* lii.

Theocritus calls the Lentisk *sweet*—ἀδείας σχίνοιο.—*Idyl.* vii. *v.* 133. Again he says, (*Idyl.* xxvi. *v.* 11.) Σχῖνον ἐς ἀρχαίαν καταδὺς, ἐπιχώριον ἔρνος,—that it was a plant indigenous in the country.

Throughout the island of Sicily this shrub, *il Lentischiu*, or *Lestincu*, is abundant on waste hilly ground.

26. Rhus coriaria.—Elm-leaved Sumach.—*Fl. Græc. vol.* iii. *tab.* 290.

'Ροῦς.—*Diosc. lib.* i. *cap.* 148. Theophrastus mentions two varieties, male, and female, of the ῥοῦς, *lib.* iii. *cap.* 18.—The leaf like that of the Elm, φύλλον δὲ ὅμοιον πτελέᾳ, and curriers tan white skins with it,—βάπτουσι δὲ τούτῳ καὶ οἱ σκυτοδέψαι τὰ λευκὰ δέρματα.—Dioscorides relates the same,—τοὺς βυρσοδέψας αὐτῇ χρῆσθαι εἰς την στύψιν τῶν δερμάτων.—Its leaves are still used for tanning leather. At present this Sumach is called 'Ροῦδ in Greece, but in Cyprus it retains the ancient name 'Ροῦς.—*Sibth.* *il Sommaccu:* it is cultivated about Alcamo, Monreale, Castel á mare, and Palermo; from whence a great deal is exported.

27. R. Cotinus.—Obovate-leaved Sumach.

Κοκκυγρία.—*Theoph. lib.* iii. *cap.* 16.—According to *Stackhouse.*—Its Romaic name is χρυσοξυλον.—*Dodwell.* The leaves, when pressed, emit an agreeable perfume.

28. Juglans Regia.—Common Walnut.

Κάρυα βασιλίκη, ἢ περσίκη, ἢ Ευβοϊκη.—*Theoph. lib.* iii. *cap.* 6, 7, &c., and of *Diosc. lib.* i. *cap.* 179.—The oil prepared from the kernels was named ἔλαιον καρύϊνον.—*Diosc. lib.* i. *cap.* 42.

This tree is cultivated.

LEGUMINOSÆ.

29. Anagyris fœtida.—Stinking Bean-Trefoil.—*Fl. Græc. vol.* iv. *t.* 366.

Ανάγυρις.—*Diosc. lib.* iii. *cap.* 167.—Ανάγυρι hodiè.—*Sibth.*

30. Spartium villosum.—Shaggy Broom.

Ασπάλαθος.—*Diosc. lib.* i. *cap.* 19.—It is, according to *Sprengel*, the ἀσπάλαθος.—*Theoph. lib.* ix. *cap.* 7. *Dr. Sibthorp* says, that in Cyprus it still retains its ancient name, somewhat corrupted Σπάλαθος. This plant is mentioned in Theocritus, *Idyl.* iv. *v.* 57, and *Idyl.* xxiv. *v.* 87.

31. Cytisus Laburnum.—Common Laburnum.—*Bot. Mag. vol.* v. *t.* 176.

Κύτισος δενδρώδης.—*Theoph. lib.* i. *cap.* 9, secundùm *Stackhousium.* This elegant tree, with its pendulous branches of golden flowers, is one of the earliest ornaments of a southern spring.

32. Medicago arborea.—Tree Medick.

Κύτισος φρυγανώδης.—*Theoph. lib.* i. *cap.* 20, according to *Stackhouse.* Perhaps it may be the κύτισος of Theocritus; see *Idyl.* v. *v.* 128. and x. *v.* 30.

33. Melilotus Messanensis.—Messina Melilot.

Sprengel supposes this species to agree with the Λωτὸς.—*Diosc. lib.* iv. *cap.* 111.

34. Glycyrrhiza echinata.—Prickly-podded Liquorice.—*Bot. Mag. vol.* xlvii. *t.* 2154.

The plant named γλυκύῤῥιζα, (*Diosc. lib.* iii. *cap.* 7.) is described as having a rough or prickly fruit, and, therefore, I would refer it to this species; so also the γλυκεῖα καὶ ἡ Σκυθικὴ ῥίζα of Theoph. *lib.* ix. *cap.* 13. Theophrastus mentions, that it would satiate thirst, if one kept it in his mouth; hence it was said the Scythians could subsist on it for eleven or twelve days;—Δύναται δὲ καὶ τὴν δίψαν παύειν, ἐάν τις ἐν τῷ στόματι ἔχῃ, διὸ ταύτῃ διάγειν φασὶ τοὺς Σκύθας ἡμέρας καὶ ἕνδεκα καὶ δώδεκα.—Pliny confirms this story.

35. Biserula Pelecinus.—Bastard Hatchet-Vetch.

Ἡδύσαρον ἢ πελεκῖνος.—*Diosc. lib.* iii. *cap.* 146, and πελεκῖνος.—*Theoph. lib.* viii. *cap.* 8.—According to *Sprengel*; but *Stackhouse* refers them to Coronilla Securidaca.—Both Dioscorides and Theophrastus say the seed resembles a hatchet,—ὅμοιον πελέκει.

Common on Mount Etna.—*Bivona.*

36. Cicer Arietinum.—Common Chick Pea.—*Bot. Mag. vol.* xlix. *t.* 2274. This I consider the second species of ἐρέβινθος—*Diosc. lib.* ii. *cap.* 126, which was called κριός from the seed resembling a ram's head.—Pliny also (*Hist. Nat. lib.* xviii. *cap.* 12.) says,—est enim Arietino capiti simile, undè ità appellatur. *Sprengel* supposes it to be the ἐρέβινθος.—

Theoph. lib. viii. *cap.* 1.; but *Stackhouse* has referred it to Ervum Lens.—It is called in Sicily, *Ceci*, and is much cultivated, and used for food, either raw or cooked.—At Athens and in Zante, it bears the name ῥοβίθι.—*Sibth.* "Ερεβίνθοι, formed a common dessert among the ancient Greeks, eaten green and tender, or when dry parched with fire."—(*Walpole's Turkey, note, p.* 250.)

The custom of roasting pulse is still retained in Sicily, it is most ancient. Mention is made of it in Scripture, 2 Sam. chap. xvii. v. 28.—"Beans, and lentils, and *parched pulse*." Also Theocritus *Idyl.* vii. *v.* 66., has,—

πὰρ πυρὶ κεκλιμένος. κυάμον δὲ τις ἐν πυρὶ φρυξει.

And Xenophanes Colophonius observes as quoted by Athenæus,—*lib.* ii. *cap.* 13.

Πὰρ πυρὶ ———
Πίνοντα γλυκὺν οἶνον ὑποτρώγοντ' ἐρεβίνθους.—

Plautus likewise *Bac.* 4. 5. 7. amongst other things states, 'Frictum Cicer'.—And Aristophanes in Pace, Ανθρακιτῶν πολυερεβίνθου *Walsh. Confer. Horat. de arte Poetic.* v. 249.

The boiling of Pulse, ἡ ἕψησις τῶν πυανῶν, was an ancient festival among the Athenians, called πυανέψια. For an account of the institution of it, refer to Plutarch's life of Theseus. Boiled Pulse is still a favourite food in Italy and Sicily. Also in Greece, "mixed with dried currants."—(*Dodwell.*) Our custom of eating boiled wheat and currants, or frumenty, (*frumentum.*) on Christmas Eve, is our English *Pyanepsia*, or rather *Pyronepsia*, derived, ἀπὸ τοῦ ἕψειν πύρον, (that is to say,) from boiling wheat.—

37. Ervum lens.—Common Lentil.

Φακὸς *Diosc. lib.* ii. *cap.* 129. also of *Theoph. lib.* viii. *cap.* 3. It is now called φάκη at Athens according to *Sibthorp.* In Sicily it is much eaten, and named *Lenticchia.*—τὸν φακὸν ἕψειν, occurs in Theocritus, *Idyl.* x. *v.* 54.

38. Ochrus pallida, *Pers.* (Pisum ochrus, *Lin.*) Pale Ochrus.

Ὠχρός, *Theoph. lib.* viii. *cap.* 3. Now called in Greece ἄυχος. *Sibth.* Frequent in corn-fields.

39. Lathyrus sativus.—Blue Chickling Vetch.

Λαθύρος.—*Theoph. lib.* viii. *cap.* 10. It is named in the Sicilian dialect *Cicerchia.*

40. Ceratonia Siliqua.—Caroub-tree. St. John's Bread, or Locust-tree.

Κερωνία. *Theoph. lib.* i. *cap.* 18. The pods are named by Dioscorides, *lib.* i. *cap.* 159, κερατία, from their resemblance to small horns. In Romaic they are called ξυλοκερατιὰ, or *wood-horns;* but in Cyprus they retain their ancient name, κερατιὰ, *Sibth.*—In Arabic, *Kharoob;* in Italian, *Carrube;* in French, *Carrubes.* Pliny thus very accurately describes them,—Prædulces siliquæ——digitorum hominis longitudo illis, et interim falcata pollicari latitudine.—(*Lib.* xv. *cap.* 24.)—The pods being filled with a saccharine pulp are eaten both green and when dry; they were a favourite food with the ancients. I observed some in the Museum at Naples, which had been found in a house at Pompeii. They are also given to cattle. In Sicily a spirit and a syrup are prepared from them. The Caroub-tree is very handsome; the largest I saw were near Augusta, and at Syracuse. A Syracusan gentleman informed me that bees are extremely fond of the flowers, and that he attributed the excellence and flavour of the Hyblæan honey to them.

It has received the name of St. John's Bread, or Locust-tree, because some authors interpret the *locusts,* on which St. John fed, to be these pods. But there is no reason why the Baptist should not have eaten *real locusts,* as some nations are wont to do, both in ancient and modern times. Herodotus relates that the Nassamones, a people of Libya, caught locusts, and having dried them in the sun, ground them to a powder, mixed them with milk, and drank them,—Νασσαμῶνες τοὺς ἀττελέβους ἐπεὰν θηρεύσωσι, αὐήναντες πρὸς τὸν ἥλιον, καταλέουσι, καὶ ἔπειτα ἐπὶ γάλα ἐπιπάσσοντες, πίνουσι.—*Melpom. cap.* 172.—And Belzoni says that the Egyptians at the present day, "eat them when fried, considering them a dainty repast,"—(*Vol.*

i. *p*. 306. 8vo. *Edit*. 1822.) We also learn from Leviticus, *chap*. xi. *v*. 22, that, "the *locust* after his kind, and the *bald locust* after his kind," were allowed to be eaten. A people of Ethiopia, called ἀκριδοφάγοι, Locust-eaters, are mentioned by Diodorus Siculus, *Bib. Hist. lib*. iii. *cap*. 28, by Pliny *Hist. Nat. lib*. vi. *cap*. 30, and *lib*. xi. *cap*. 29, and by Strabo *lib*. xvi. And for further authorities of Locusts being still eaten and considered a delicacy, see,—*Beechey's Exped. to N. coast of Africa*, *p*. 109.—*Forbes' Orient. Mem. vol*. i. *p*. 46.—*Hasselquist*, *p*. 231. 419.—*Horneman's Africa*, *p*. 59.—*Jackson's Morocco*, *p*. 52.—*Ludolphi Hist. Æthiop*. *p*. 67.—*Russell's Aleppo*, *p*. 62.—*Salt's Abyssinia*, *p*. 172.—*Shaw's Travels*, *p*. 188.

The Caroub-tree has a considerable range; it is met with in Malta, (*Forsk.*) the Balearic isles, chiefly in Majorca; in the South of Spain (*Cambessèdes.*) In Southern Italy (*Ten.*) In Turkey, Greece, and the Grecian Islands (*Smith.*) In Asia Minor, Syria, Palestine (*Hasselquist.*) In the North of Africa; and even in the kingdom of Bornou, in the centre of Africa, according to *Denham* and *Clapperton*.

41. Cercis Siliquastrum.—European Judas-Tree.—*Fl. Græc. vol*. iv. *t*. 367. *Bot. Mag. vol*. xxviii. *tab*. 1138.

Κερκὶς.—*Theoph. lib*. iii. *cap*. 14. Now named κουκουροβιθιὰ, and κοτζουκουνάρι in Greece.—*Sibth.*

This very elegant plant seldom rises above a low stunted shrub in its wild state, and is indigenous in all the Southern countries of Europe.

ROSACEÆ.

42. Amygdalus Persica.—Peach.

Stackhouse conjectures that the tree, which Theophrastus describes, *lib*. iv. *cap*. 2. and calls περσία, signifies this species; and I would also refer to it the περσία, *Diosc. lib*. i. *cap*. 188, which is a tree bearing a good wholesome fruit,—δένδρο ἐςι, καρπὸν φέρον ἐδώδιμον, εὐςόμαχον.—Theophrastus indeed states, that it was the size of a Pear-tree, ἄπιος, resembling the almond-tree, ἀμυγδαλώδης, and having a fruit of a very sweet and pleasant flesh,—*ἔχει τὴν δὲ σάρκα γλυκεῖαν σφόδρα καὶ ἡδεῖαν.*—In Sicilian the Peach-tree is named *Persicu*, and the fruit *Pérsica*, or *Pésca*.

43. A. communis.—Common Almond-tree.

Mándorlu : In Sicily, both the bitter Almond, *la mándorla amara*, and the sweet, *la mandorla dolce*, are much cultivated. Ἀμυγδαλῆ *Diosc. lib.* i. *cap.* 177. where both sorts are mentioned, Α. πικρὰ, and Α. γλυκεῖα.—Dioscorides describes the way of making oil of almonds—Ἀμυγδάλινον ἔλαιον, *lib.* i. *cap.* 39.—Ἀμύγδαλος *Theoph. lib.* i. *cap.* 18.—Pomegranate, peach, almond, apricot, and a variety of other fruit-trees grow luxuriantly in the lower or fertile region of Mount Etna. In ascending this region, called also *Regione Piédemontana*, and with reference to the climate, the *torrid zone*, the traveller is amazed with the continued succession of vineyards, orchards and gardens for at least ten miles. This district of beautiful vegetation is only interrupted here and there, where the later streams of lava have flowed, and are not yet decomposed. The second, or middle region, *Regione selvosa*, abounds in large woods of oak, fir, and other forest-trees. Hence, Theocritus properly names the mountain, ἁ πολυδένδρεος Αἴτνα (*Idyl.* xi. *v.* 47.) This is the *temperate zone.*

The upper, or snowy region, *Regione nevosa* answers to *frozen zone.* Here vegetation ceases, and—

——————Stat glacies iners
Menses per omnes.———

But even the snow and ice of this perpetual winter have their value and their charms, for they are sent not only to different places in the island, but also to Italy, to the confectioners for iceing creams, fruit and water, &c., during the summer ; the latter, the Syracusan poet has called a heavenly drink,—ἐντὶ ψυχρὸν ὕδωρ———λευκᾶς ἐκ χιόνος, ποτὸν ἀμβρόσιον.—*Idyl.* xi. *v.* 47, 48. *Confer. Sil. Ital. lib.* xiv. *v.* 64—70.

Mount Etna is only known to the natives by the name *Mon Gibellu*, which is corrupted from the Arabic word *Gibel*, or *Djebel*, a mountain : so Gibraltar, or *Gibelterra*, signifies mountain-land. The Moors were long in possession of Sicily. The altitude of Mount Etna to its extreme summit, from the Ionian sea is 10,874 feet, according to Captain *Smyth.*

44. Poterium spinosum.—Prickly Burnet.

Στοιβή, *Diosc. lib.* iv. *cap.* 12. ?—Φλεώς, which some call στοιβή, *Theoph. lib.* vi. *cap.* 1,—now bears its old name in Greece στοιβη, and in Crete στοιβηδὰ—*Sibth.*—*Stackhouse* supposes the plant of Theophrastus to correspond with *Centaurea Stœbe.*

Plentiful on the sand links between Catania and Augusta.

45. Rosa Gallica.—Red officinal Rose.

The Rose, Ῥόδον, was anciently used for making garlands—ῥοδινους στεφανους—*Stesichori fragm.* iv. 2. and for bedecking graves and tombs;—whence Anacreon,—τοδὶ καὶ νέκροις ἄμυνοι,—'This is the amulet, hereby no ills their tombs molest.'—Pliny, mentioning (*lib.* xxi. *cap.* 3.) wreaths or chaplets of flowers, says of them,—"coronæ, Deorum honos erant et Larium publicorum privatorumque, ac sepulchrorum et Manium." Not only the Selinum, the Myrtle, and the Rose, but all sorts of flowers decorated the ancient Greek tombs, as appears from *Sophocles, Electra, v.* 895,—

Ὁρῶ————
———————— περιστεφῆ κύκλῳ
πάντων ὅσ' ἔσιν Ανθέων θήκην πατρός.

In the South of Europe, the custom of adorning with wreaths the tombs of deceased friends is still retained, and of planting flowers on their graves, and keeping them alive by frequently scattering water over them. A pleasing and melancholy remembrance of the dead is thus on every visit to the cemetery renewed and cherished.—The following lines from Prudentius are so elegant, that I have here inserted them:—

Nos tecta fovebimus ossa
Violis et fronde frequente,
Titulumque et frigida saxa
Liquido spargemus odore.

Lord Byron indeed relates,—"in the Levant it is the custom to strew flowers on the bodies of the dead, and in the hands of young persons to place a nosegay."

It will be here unnecessary to enter upon any details as to the many uses and benefits, which plants, and in particular the Classical Plants, have afforded to the fine arts; and I will only observe in the words of a learned writer,—"the Rose is the essential part of all the ornaments of the earlier Christian architecture; even the shape of the windows, doors, and towers, may be traced to it, as well as the accompanying decorations of flowers and leaves."

Dioscorides has given a recipe for making Rose oil, ῥόδινον ἔλαιον, *lib.* i. *cap.* 54. Desfontaines states, that the people of Tunis distil a delightfully fragrant essential oil, or ottar of Roses, from the flowers of the Musk Rose. Conserve of roses is an elegant medicine.

46. Cratægus Azarolus.—Azarole Thorn.

It is, according to *Stackhouse*, Μεσπίλη ἀνθηδὼν, *Theoph. lib.* iii. *cap.* 12. The fruit is eaten and called *Lazzeruola*, or *Azzeruola.*

47. Aronia rotundifolia, *Pers.* (Pyrus Amelanchier, *Willd.*) Round-leaved Aronia, *Bot. Mag. vol.* l. *tab.* 2430.

Συκῆ Ἀλεξανδρεία, *Theoph. lib.* iii. *cap.* 16, according to *Sprengel*; observed in the mountainous parts of Sicily.

48. Cydonia vulgaris, *Pers.* (Pyrus Cydonia, *Linn.*)—Common Quince.

Κυδώνιος, *Theoph. lib.* ii. *cap.* 3. apud *Stackhousium*; ubi Στρουθίος, C. vulgaris, *sylvestri statû* interpretatur.

The fruit, Dioscorides calls Κυδώνια μῆλα, *lib.* i. *cap.* 161; and a second sort, Στρουθία, is mentioned, which is large and less useful in medicine, κυδώνια μᾶλα, *Stesichori fragm.* iv. 2. In Sicily, the Quince-tree is named *Cotognu*, and the apple, *Mela Cotogna.*

MYRTACEÆ.

49. Myrtus communis.—Myrtle.—*Fl. Græc. vol.* v. *tab.* 475.

Μυρσίνη, *Diosc. lib.* i. *cap.* 156.—Μυῤῥίνη, *Theoph. lib.* i. *cap.*

24. Μυῤῥίνος, *cap*. xv. and Μύῤτος, *cap*. ix. In Greece it has now the following names, Μύῤσινη, μύῤτον, μάῤσινον, and μυῤτιά. The fruit is eaten by the modern, as it was by the ancient Athenians.—*Sibth.* Et erant olim usui Myrti baccæ; Plato suos cives μύῤτοις tanquam bellariis vesci voluit. *lib.* xi. *de Repub. Wessel. Obs.* 52.—(*Walpole's Turkey*, *Note*, xxi. *p.* 240.)

The Myrtle was sacred to Venus, and was a coronary plant: Tibullus (i. 3. 66.) says, "Et gerit insigni *Myrtea serta* comâ."—Boughs of it, κλωνία μυῤσινης, were used in decorating tombs among the ancient Greeks. *Vide Euripid. Electra.*—This custom is still retained amongst the Turks, (*Walpole.*) Theophrastus also relates, that the inhabitants of the promontory of Circe were wont to show the tomb of Elpenor, on which myrtles grew, καθάπεῤ αἱ Στεφανώτιδες.—See *lib*. v. *cap*. 9.—Μύῤτοισι occurs in Theocritus, *Epigram*, iv. *v.* 7. and μυῤῥίνα φυλλα, in an ode of another Doric Sicilian poet, *Stesichorus*, iv. 2. Dioscorides mentions an oil made from the Myrtle, and which he names μυῤσινελάιον, *lib*. i. *cap*. 49.

The myrtle, *Mirtu*, is a common wild plant in Sicily.

50. Punica Granatum.—Pomegranate.—*Fl. Græc. vol.* v. *tab*. 476.—*Bot. Mag. vol.* xliii. *t.* 1832. *A.* and *B.*

Ῥοα, *Diosc. lib*. i. *cap*. 152.—The flowers of the cultivated Pomegranate were called Κύτινοι, *cap*. 153. The shells of the fruit, λέπη, were named Σίδια, *cap*. 154, and βαλαύστιον signifies the flower of the wild pomegranate, ἀγρίας Ῥοιᾶς, which resembles the flower of the cultivated one, ἔοικε δὲ Κυτίνῳ Ῥοιᾶς, *cap*. 155.—Ῥοα, ἢ Ῥοιὰ, *Theoph. lib*. i. *cap*. 22. Ῥοιὰ, et Ῥοιδιὰ, *Græc. hod. Sibth.*—Malum Punicum, of Pliny. Ælian tells an anecdote, περὶ μεγάλης Ῥοιᾶς, of a large variety, *lib*. i. *cap*. 33.

The fruit is described by Columella thus,—Mala granata, quæ Punica vocantur.—(*de Re Rust. lib*. xii. *c.* 42.) *i. e.*, grain-apples, which are called Pomegranates. They were named *granata*, from the abundance of their granulary seeds; and *Punica*, most probably with reference to their fine *red* colour. —Hence Ovid,—

> Punica sub lento cortice Grana rubent.

But if the apple took one name from Carthage or Africa, it is doubly favoured, for it also is said to have given the other to Granada in Spain. Fruits, flowers, plants, and trees have afforded names not only to countries, cities, islands, and rivers, but also to mankind; as, for example, Phœnicia, Biblus, Cyparissi, Rhamnus, Granada, Staphyla, Fierenza, Scios, Rhodes, Ischia, Selinus, Lily, Ianthe, Rose, Gulnare, and a thousand others.

On account of the profusion of its seeds, the Pomegranate, called in Sicilian, *Melágrana*, was, with the ancients, a mystical fruit, typifying procreation, increase, and abundance.

The tree will grow slowly on pure lava.

Several kinds are cultivated in Sicily. The flowers of the double variety are astringent, and were formerly used in medicine, and kept in the shops, under the name of *Balaustins*, (*Bot. Mag.*)

Hasselquist observes the inhabitants of Cyprus called a variety of the Pomegranate having a small stem, and barren flowers, *Balaustia*, *p.* 247. Pomegranates cut in slices, are frequently eaten with wine and sugar, or with brandy and sugar; so, in the Song of Solomon, *chap.* viii. *v.* 2, the bride says to her love, " I would cause thee to drink of spiced wine of the juice of my Pomegranate." It is probable that Horace alludes to this custom in the following words, " dulci mala vino lavere."

CUCURBITACEÆ.

51. Momordica Elaterium.—Squirting Cucumber.—*Bot. Mag. vol.* xliv. *t.* 1914.

Ἐλατήριον.—*Diosc. lib.* iv. *cap.* 155. Σίκυος ἄγριος ἢ ἐλατήριον.—*Theoph. lib.* ix. *cap.* 15. The wild cucumber, or, as it is sometimes called, Asses' Cucumber, was named ἐλατήριον, from ἐλαύνω (to eject), because the capsules eject the juice and seeds on the least touch. Dioscorides says,—τοὺς ἅμα τῷ ἅψασθαι σικύους ἀποπηδῶντας ἐκλέγων,—in gathering these cucumbers as soon as they are touched they spring open; and Pliny relates, "semen exhilit, oculorum etiam periculo," (*lib.* xx. *c.* 1.)

The Elaterium is still used medicinally.

This is a very common plant in clayey soils on the south coast of Sicily, particularly at Terra Nuova, Alicata, Girgenti, Sciacca, &c. The elasticity of the capsules affords great amusement to the lower class, who sometimes call it *Cetriuolu di Diavulu*, or Devil's Cucumber. Its modern appellation is πίκρο ἀγγόυριο, in Greece, according to Dr. *Sibthorp*, which signifies a *bitter water-melon;* and ἀγγεῖα, apud *Aphrod. Probl. lib.* ii. means *Gourds;* both words being derived from ἄγγος, *Vas*, because the shells of gourds and melons are constantly used for vessels.

52. Cucurbita Pepo.—Great Pumpkin.

Πέπων.—*Diosc. lib.* ii. *cap.* 164. In Sicilian it is called *Cucumeru.* Many kinds of Gourd are cultivated, and most of them serve for food.

53. C. Citrullus.—Water Melon.

Σικύα.—*Theoph. de Caus. Plant. lib.* v.? Αγγουρια, *Græc. hod.* (*Dodwell.*) It is much grown, and named *Cetrivulu;* it is both meat and drink to the common people in the summer; but a stranger ought to be very careful in eating it, as it is liable to produce a sudden and violent colic.

54. Cucumis Sativus.—Manured Cucumber.

Σίκυς ἡμέρος.—*Diosc. lib.* iv. *cap.* 154. Σικύος.—*Theoph. lib.* vii. *cap.* 5.

PORTULACEÆ.

55. Tamarix Gallica.—Red-wooded Tamarisk.—*Fl. Græc. vol.* iii. *tab.* 291.

Μυρίκη.—*Diosc. lib.* i. *cap.* 117, and *Theoph. lib.* i. *cap.* 15. But *Stackhouse* considers the plant of Theophrastus to be *Myrica cordifolia*, with which it cannot be identical, as *Theoph. lib.* i. *cap.* 16, describes the leaf σαρκῶδες ἐν στρογγυλότητι, *fleshy in roundness, i. e.*, thick, cylindrical. Now called Μυσικία, ἢ Αρμυρίκη. *Sibth.*—μυρῖκαι. *Theocritus, Idyl.* i. *v.* 13, and *Idyl.* v. *v.* 101.

On the banks of rivers, but not so abundant as the *T. Africana.*

CACTI.

56. Cactus Opuntia.—Common Indian Fig.—*Bot. Mag. vol.* l. *t.* 2393.

Κάκτος, *Theoph. lib.* vi. *cap.* 4.—It is not mentioned by Dioscorides. Theophrastus relates, that this plant grew only in Sicily, and not in Greece. In Athens it is named Αραβοσυκη—Arabian Fig—according to *Dodwell.* The leaves, or stems, καυλοι, were called κακτοι, they were prickly, and the skin being taken off, they were eatable, when pickled in brine, ἅλμῃ. The fruit was also eaten. See *Athen. lib.* ii. and *Pliny, Hist. Nat. lib.* xxi. *cap.* 16.—*Theocritus, Idyl.* x. *v.* 4. has,—ὤς ποίμνας τᾶς τὸν πόδα κάκτος ἔτυψεν,—a sheep, whose foot the Cactus had wounded. The Indian Fig, *Ficu d' India,* although so long naturalized in Sicily, was most probably introduced from Africa. It flourishes on the bare lava at Catania, where are the largest plants I saw in Sicily. It grows in the most sterile ground, in sand, in the fissures of rocks, among old buildings, and in walls, sometimes to above twelve feet high, and its stem exceeding a foot in diameter. The figs are at first green, but when ripe, change to a reddish yellow. They are very juicy, sweet, wholesome, and refreshing; the leaves produce an abundance of them the whole summer. A variety, bearing dark-red figs, is cultivated at Catania, and esteemed delicious.

It is propagated by planting single leaves in the earth. The Cactus and the American Aloe make an impenetrable hedge.

ARALIACEÆ.

57. Hedera chrysocarpum.—*Plin.*—Yellow-berried Ivy.

I believe no systematic work on Botany has yet described this ancient plant. *Tournefort* is one of the earliest authors in modern times who has mentioned it, and who discovered it in Greece. He states, "les feuilles sont d'un vert plus gai que celles du lierre commun, et ses bouquets couleur d'or lui donnent un éclat particulier." (*Voyage du Levant, vol.* i. *Let.* 12.)

Dr. *Walsh*, in "An account of Plants growing in the neighbourhood of Constantinople," (*see Horticult. Trans. vol.* vi. *p.* 43.) says, "it is a rare plant, and after a search of three years, I only found a single specimen growing over the wall of an hospital in the vicinity of Pera. The whole appearance and character of the plant are very different from the Black Ivy. It is still sold in the herb shops of Constantinople, and used medicinally."

The edition (1826) of *Donn's Hortus Cantab. p.* 86, has marked, that this plant was first cultivated in Britain in the year 1821. It is worthy of a place in our gardens, as being so truly classical a species. *Dioscorides, lib.* ii. *cap.* 210, describes a sort of Ivy, κισσὸς, which bears yellow, or saffron-coloured fruit, καρπὸν κροκίζοντα, and was commonly named the "Dionysian,"—ὃν δὴ καὶ ἰδιῶται Διονύσιον καλοῦσιν.—*Theophrastus, lib.* iii. *cap.* 18, makes no mention of the yellow sort. It was anciently used for crowning Bacchanalians, tragic, comic, and other poets; Pliny says of it,—alii semen crocatum, cujus coronis Poetæ utuntur, foliis minus nigris, [quam quidem Nysiam alii Bacchicam vocant,————apud Græcos,—— ——à colore acinorum————*chrysocarpum.* (*Hist. Nat. lib.* xvi. *cap.* 34.)—It is the *Hedera Poetica* of Gaspard Bauhin.—Thus Virgil,—

> ———Hanc sine tempora circùm
> Inter Victrices Hederam tibi serpere lauros.

Theocritus mentions the head of Priapus crowned with it,—*Epig.* iii. *v.* 3.—

> ————ὁ τὸν Κροκόεντα Πρίηπος
> Κισσὸν ἐφ' ἱμερτῷ κρατὶ καθαπτόμενος.

Again, in *Idyl.* i. *v.* 30, where the sculptured cup is described, are the following lines,—

> Κισσὸς ἑλιχρύσῳ κεκονισμένος· ἁ δὲ κατ' αὐτὸν
> Καρπῷ Ἕλιξ εἱλεῖται ἀγαλλομένα Κροκόεντι.

See also Virgil's description of Menalcas's bowls. *Ec.* iii. *v.* 39. Mr. *Dodwell*, in his Travels through Greece, (*vol.* i. *p.* 460.) gives an account of a fragment of a vase found near Athens, which was "ornamented with the ivy plant in relief and *gilt*." He adds, "this is the Golden Ivy, or *Hedera pallens* of Virgil. It was a Dionysiac plant, and the vases which were ornamented with it, were called *Hederata*, and *Corymbiata*."

But the μέλας κισσὸς, *Theoc. Idyl.* xi. *v.* 46. doubtless means the *Hedera Helix*, so called from the colour of its berries.

H. chrysocarpum is clearly the "*var.* baccis flavis" of *Cupani*, which is found at Caronia, Ficuzza, and Francavilla, according to *Gussone*.

UMBELLIFERÆ.

58. Echinophora tenuifolia.—Fine-leaved Echinophora.—*Fl. Græc. vol.* iii. *t.* 266.

Dr. Sibthorp supposes this to be the "Marseilles Seseli."—Σέσελι Μασσαλεωτικὸν.—*Diosc. lib.* iii. *cap.* 60.

59. Bupleurum fruticosum.—Shrubby Hare's Ear.—*Fl. Græc. vol.* iii. *t.* 263.—Σέσελι Αἰθιοπικὸν.—*Diosc. lib.* iii. *cap.* 61. —(*Fl. Græc.*)

In dry stony ground, not unfrequent.

60. Seseli tortuosum.—Crooked meadow-Saxifrage.

Μυοφόνον. *Theoph. lib.* vi. *cap.* 2, apud *Sprengelium*; at *Stackhousio* species incognita.—*Hab.* in campis aridis et montosis.

61. Cachrys Sicula.—Sicilian Cachrys.—*Fl. Græc. vol.* iii. *tab.* 278.

Ἱππομάραθρον. *Theoph. lib.* vi. *cap.* 1, according to *Thiebault*; but *Stackhouse* considers that to be *Ferula communis*.

A common plant in sandy ground near the sea-shore.

62. Selinum sylvestre.—Wild milk-Parsley.

Σέλινον, *Diosc. lib.* iii. *cap.* 74, and *Theoph. lib.* vii. *cap.* 6.—This plant was held in great esteem by the ancients. Having an aromatic smell, Theocritus justly says, εὐόδμοισι Σελίνοις, (*Idyl.* iii. *v.* 23.), where he describes it as being interwoven in a garland or chaplet. Confer also *Idyl.* xx. *v.* 23, therefore, in *Idyl.* vii. *v.* 68, this parsley is called *flexible*, πολυγνάμπτῳ τε σελίνῳ. In another passage, *Idyl.* xiii. *v.* 42, Theocritus gives it the epithet θάλλοντα; and Moschus, *Idyl.* iii. *v.* 107, has τὰ χλωρὰ σέλινα: so Horace, "neu *vivax* apium."

A crown of Selinum was the reward of victory at the Isthmian and Nemean games. It was also particularly used in bedecking tombs amongst the Greeks, and hence the old proverb,—Δεῖσθαι Σελίνου,—to be at the point of death. Plutarch mentions an interesting tale concerning this plant, in his life of Timoleon.

The ancient river and city of Selinus received their names from it, the leaves being introduced on the Selinuntine coins. This species is reported still to grow near the grand and colossal ruins of *Selinunte.*

63. Heracleum Panaces.—Fig-leaved Cow-parsnep.

Πάνακες 'Ηράκλειον.—*Diosc. lib.* iii. *cap.* 55; also *Theoph. lib.* ix. *cap.* 12, according to *Stackhouse.*

64. Ferula Ferulago.—Fennel-leaved Giant-Fennel.

Supposed to be the Νάρθηξ. *Diosc. lib.* iii. *cap.* 91, and *Theoph. lib.* vi. *cap.* 2.—See also *Pliny, Hist. Nat. lib.* xiii. *cap.* 22.

65. Thapsia Garganica.—Garganian Deadly-Carrot.—*Fl. Græc. vol.* iii. *t.* 287.

Θαψία. *Diosc. lib.* iv. *cap.* 157, and *Theoph. lib.* ix. *cap.* 10. Observed on the south coast near Sciacca, et alibi.

COMPOSITÆ.

66. Scolymus Hispanicus.—Spanish Golden-Thistle.

Σκόλυμος.—*Diosc. lib.* iii. *cap.* 16. ?—and of *Theoph. lib.* vi. *cap.* 4, according to *Stackhouse.* Hesiod, elegantly describing the time of year, says,—Ἦμος δὲ Σκόλυμός τ' ἀνθεῖ. When the Scolymus flowers, *i. e.*, in hot weather, or summer.—(*Op. et Dies. v.* 582.)

This plant covered with its golden flowers is abundant throughout Sicily.

67. Apargia tuberosa.—Tuberous-rooted Apargia.

Χόνδρυλλα.—*Theoph. lib.* vii. *cap.* 11, and the second species of χονδρίλλη.—*Diosc. lib.* ii. *cap.* 161, according to *Sprengel.* But *Stackhouse* considers the plant of Theophrastus to be *Chondrilla juncea.*

68. Artemisia Pontica.—Pontic Wormwood.

Ἀψίνθιον.—*Diosc. lib.* iii. *cap.* 26, also of *Theoph. lib.* vii. *cap.* 9. *Stackhouse* supposes it *A. Absinthium.* But since the *A. Pontica* is still called ἀψίνθιο in Greece, (*Sibth.*) I would suppose, without doubt, this plant to be the same with those of Dioscorides and Theophrastus.

69. Chrysanthemum coronarium.—Garden Chrysanthemum.

Χρυσάνθεμον.—*Diosc. lib.* iv. *cap.* 58. which is described as —φύλλα πολυσχιδῆ, ἄνθη μήλινα, ἰσχυρῶς στίλβοντα, *i. e.* leaves multifid, flowers yellow, very splendid. In Laconia, Dr. *Sibthorp* says it is now called χρυσάνθεον.—This was one of the ancient ornamental or coronary flowers, στεφανωτικὰ ἄνθη. Many sorts of flowers and plants were formed into garlands, or chaplets. Theophrastus, *lib.* vi. *cap.* 6, mentions that branches, or leaves, or flowers, of various shrubs, or herbaceous plants, either sweet-scented, or scentless, either wild, or cultivated, &c., were used in the coronary art. Pliny also states, *lib.* xxi. *cap.* 2, Arborum enim ramis coronari in sacris certaminibus, mos erat primum. Posteà variari cœptum mistura versicolori; florûmque invicem odores coloresque.—And from these two verses of Archestratus in *Athenæi Deipnosoph. lib.* iii. *cap.* 22, we find flowers of every kind were in use :—

Αἰεὶ δὲ στεφάνοισι κάρα παρὰ δαιτὶ πυκάζου
Παντοδαποῖς, οἷς ἂν γαίας πέδον ὄλβιον ἀνθεῖ.

The bearing of flowers in honour of Proserpine, whom Pluto carried away as she was collecting flowers in the meadows of Enna, (read the beautiful tale in Ovid, *Met. lib.* v. *fab.* 6.) was a Sicilian festival, and called Ἀνθεσφόρια.—The Romans celebrated a similar *festa* (Florialia) in honour of Flora. From both of these, our English May-garlands and May-

Lady have doubtless originated. Wreaths, coronets, and bouquets made either of natural, or of artificial plants of every colour and form, have been, from the earliest times, the delights and ornaments of those fairest of created beings—*Women*, in every civilized nation and climate of the world. But I was much surprised in learning from a recent work —Histoire Naturelle de l'Homme, par *M. Lesson*,—that the barbarian natives of some of the South Sea islands, instead of adorning themselves with crowns and tufts of the feathers of birds, the skins of wild beasts, and shells; and instead of attaching rings of wood, teeth of fish, and bones of animals to different parts of their bodies, which is the general custom with savages of every country, take a natural pleasure in, and prefer plants and flowers. *M. Lesson* tells us in particular that the Oceanians, Otaheitans, and the inhabitants of the Caroline and Sandwich Isles, wear garlands of flowers and sweet-smelling leaves upon their persons and garments; they delight in making wreaths of flowers of the most beautiful colours skilfully intermixed with others which possess the sweetest scents,—inter alia, the blossoms of the Arum, Ixora, Gardenia florida, and Hibiscus Rosa-Sinensis. They likewise fix a single stalk through a hole in each ear, and suspend a fragrant flower (an *Ear-gay*,) in the place of an Ear-ring. They are extremely fond of vegetable perfumes, and communicate to their dresses the odour of the fruit of the *Tamanou* (Calophyllum Inophyllum.) Although, I believe, in no country are flowers held in such estimation as in the East—for there the Greek and Turkish females, well skilled

> In "all the *Token-flowers* that tell
> What words can never speak so well,"

use them for "token of love and amity," and every individual flower and fruit and plant is represented to be an emblem of deeds or wishes, and to bear a distinct signification. On these hieroglyphics refer to a paper by *M. Hammer*, in the *Classical Journal*, *No.* xvii. March, 1814. *p.* 208. —(*Dodwell.*)

70. Santolina rosmarinifolia.—Rosemary-leaved Santolina.

Stackhouse supposes that the ἀβρότανον, *Theoph. lib.* vi. *cap.* 1, signifies this species. Dioscorides mentions two kinds θῆλυ, καὶ ἄῤῥεν, *lib.* iii. *cap.* 29; the first of which *Sprengel* refers to *S. Chamæcyparissus*, and the latter to *Artemisia Abrotanum.*

71. Atractylis gummifera, *Pers.* (Acarna gummifera, *Willd.*) Gum-bearing Atractylis. It is probably the ἀτρακτυλὶς, *Diosc. lib.* iii. *cap.* 107, and of *Theoph. lib.* ix. *cap.* 1. Several plants of this family retain nearly the ancient name ἀτρακτυλί, and ἀτρακλυδά.—*Sibth.*

Theocritus, *Idyl.* iv. *v.* 54, mentions ταὶ ’τρακτυλλίδες, or ταὶ ἀτρακτυλλίδες.

72. Carlina corymbosa.—Cluster-flowered Carline.

This plant is the Χαμαιλέων λευκὸς, *Theoph. lib.* ix. *cap.* 13, according to *Sprengel;* and probably that of *Diosc. lib.* iii. *cap.* 10. But Χαμαιλέων μέλας, of Theophrastus, *Sprengel* and *Stackhouse* refer to *Carthamus corymbosus*, which is still called in Greece Χαμαιλέο.—*Sibth.* And I would consider the species of *Diosc. lib.* iii. *cap.* 11, to be the same.

73. Centaurea Centaurium.—Great Centaury.

Κενταύριον, *Theoph. lib.* i. *cap.* 19, secundum *Stackhousium.*

74. Carthamus cæruleus.—Blue Carthamus.—*Bot. Mag. vol.* xlix. *t.* 2293.

Χάλκειος, *Theoph. lib.* vi. *cap.* 3. according to *Sprengel.*

75. Onopordum Illyricum.—Illyrian Cotton-Thistle.

It is now named Αγαιδουρὰκανθα in Greece, according to Dr. *Sibthorp.* Either to this species, or to *O. Acanthium*, which is also a native of Sicily, I would refer the ἀκάνθα of Theocritus, *Idyl.* iv. *v.* 50, and *Idyl.* vi. *v.* 15. It is evidently a syngenesious plant, for Theocritus mentions the *dry pappus*, ταὶ καπυραὶ χᾶιται.

ERICEÆ.

76. Erica arborea—Tree Heath.—*Fl. Græc. vol.* iv. *tab.* 351.

I take this to agree with ἐρείκη—*Diosc. lib.* i. *cap.* 118, which is described as a shrubby tree resembling the Tamarisk, but much less,—*δένδρον ἔστι θαμνῶδες ὁμοῖον Μυρίκη, μικρότερον δὲ πολλῷ*; perhaps the ἐρείκη, *Theoph. lib.* i. *cap.* 23. Ρίκι *Argol.* hodié *Sibth.*

In woods near Messina.

OLEINÆ.

77. Olea Europæa.—European Olive.—*Fl. Græc. vol.* i. *tab.* 3.

Ελαία, ἡ, ἡμέρος ἐλαία.—*Diosc. lib.* i. *cap.* 139.—Ελαία, *Theoph. lib.* i. *cap.* 13. 15. 16. &c.—The oil was called ἔλαιον κοινὸν.—*Diosc. lib.* i. *cap.* 30. Theocritus mentions the Olive in the 4th *Idyl. v.* 44.

The olive has ever been the principal emblem of peace. Genesis, *chap.* viii. *v.* 11.—Virgil gives it the epithet *Pacifera.*

The Olive flourishes best in a calcareous soil; it continues to bear fruit from one to three centuries, but will in extreme age become barren. It affords to the Sicilians a considerable article of commerce both in its fruit and oil. Hence many varieties are propagated with care; and oil is chiefly exported from Palermo, Olivieri, Cefalu, and Melazzo. The tree when ungrafted produces a small fruit, which gives but little oil. The Sicilians still graft the cultivated olive, *Ulivu cultivatu*, on the stock of the wild olive, *Ulivu salvaticu*, *o Uleastru.* See *Theoph. lib.* ii. *cap.* 7, and the beautiful passage in Romans, *chap.* xi. *v.* 17—24.

78. O. Europæa, *Var.* β. sylvestris.—Wild Olive.

Αγρία ἐλαία ἢ ἀγριελαία ἣν ἔνιοι Κότινον καλοῦσιν.—*Diosc. lib.* i. *cap.* 138. The Αγριελαία, which some call Κότινος.

Κότινος, *Theoph. lib.* i. *cap.* 13. &c. It retains its ancient name Αγριόελαια, and Αγροελιὰ in modern Greece. *Sibth.* Theocritus mentions the tree under both the names κότινος, and Αγριέλαιος; the first occurs, *Idyl.* v. *v.* 32. 100; *Idyl.* xxvii. *v.* 10. Moschus describes the water of the Alpheus, κοτινηφόρον, that is to say, the banks of the river were covered with the wild Olive, Χλωρή τ' ἀγριέλαιος, *Idyl.* xxv. *v.* 21. The wood of the wild Olive was esteemed by the ancient

Greeks for making tools. Theophrastus testifies (*lib.* iii. *cap.* 3.) that it is naturally stronger, ἰσχυρότερα τῇ φύσει than the cultivated olive, and that the best hammers and augers were made of it, σφυρίον μὲν καὶ τερέτριον, ἄριστα μὲν γίνεται Κοτίνου. (*lib.* v. *cap.* 9.) Shepherds' staves were also formed of it. Thus Apollonius *Arg. lib.* ii. *v.* 34.

> ———————Καλαύροπά τε τρηχεῖαν
> Κάββαλε, τὴν φορέεσκεν, ὀρειτρεφέος Κοτίνοιο.—

Theocritus describes Hercules' club as being of the same wood.—*Idyl.* xxv. *v.* 207. 257.

> ———————————Βάκτρον
> Εὐπαγὲς, αὐτόφλοιον, ἐπηρεφέος Κοτίνοιο,
> Ἔμμετρον.————

Again, *Idyl.* vii. *v.* 18.—

> ————————ῥοικὰν δ' ἔχεν Αγριελαίω
> Δεξιτερᾷ κορύναν.———

Et vide *Pausanias lib.* ii. *cap.* 31. But the common Wild Olive must not be confused with that variety of κότινος, which was called καλλιστέφανος, and was said to have been brought by Hercules from Scythia into Greece. It was reserved for crowning the victors at the Olympic games. See *Pausanias lib.* v. *cap.* 15. *sec.* 3. Theophrastus alludes to it; and states that the most ancient *Coronary Cotinus* was in Olympia, Κότινον δὲ τὸν ἐν 'Ολυμπίᾳ, ἀφ' οὗ ὁ στέφανος. (*lib.* iv. *cap.* 14.) Confer also *Herodotus*, *Uran. cap.* 26.

This tree is very frequent in the limestone districts of Sicily. It is the Oleaster of Virgil. Oil, ἔλαιον ἀγρίας ἐλαίας, *Diosc. lib.* i. *cap.* 31, 141, is at this day, in Greece, extracted from its fruit (*Dodwell*); it was formerly used in medicine.

79. Phillyrea latifolia.—Broad-leaved Phillyrea.—*Fl. Græc. vol.* i. *tab.* 2.

Φιλλυρέα, *Diosc. lib.* i. *cap.* 126.—φίλλυρα, *Theoph. lib.* i. *cap.* 16. It is now named in Greece φύλλικα, and ελαιόπρινο, according to Dr. *Sibthorp*. To this species I would refer the φυλίη of Homer. *Od. lib.* v. *v.* 477. Not uncommon in the woods of Sicily.

80. Ornus Europæa, *Pers.* (Fraxinus Ornus, *Lin.*) Manna Ash.—*Fl. Græc. vol.* i. *tab.* 4.

Μέλια. *Diosc. lib.* i. *cap.* 109. Theophrastus describes, *lib.* iii. *cap.* 11, two species, Μέλια ὑψηλή, and M. ταπεινοτέρα. The first, *Stackhouse* supposes to be *Fraxinus excelsior;* and the second, *F. Ornus.*

Its modern Greek name is Μελιος. (*Sibth.*) A great quantity of manna is procured from this tree by making horizontal incisions in the bark of the trunk, from which the whitish glutinous liquor exudes spontaneously, and hardens by the heat of the sun. It is cultivated in the neighbourhood of Gibelmanna, Tusa, Castelbuono, Cinisi, and Geraci. The Sicilian manna, *Manna Siciliana*, is more esteemed than the Calabrian, *Manna Calabrese.*

APOCYNEÆ.

81. Nerium Oleander.—Common Rose-bay.—*Fl. Græc. vol.* iii. *tab.* 248. Named also Laurel Rose. In French, Laurier-Rose: in Sicilian, Laurirosa. Rosa Laurea by Apuleius. (*Spreng.*)

Νήριον, ῥοδοδάφνη, ῥοδόδενδρον.—*Diosc. lib.* iv. *cap.* 82. May not the ἄγρία Δάφνη, *Theoph. lib.* i. *cap.* 15, signify this plant?

Dioscorides has given a good account of it; he remarks that its flowers and leaves are poisonous to dogs, asses, and mules, and that goats and sheep died, if they drank of the water in which the leaves had been steeped.

Now called in Greece πικροδάφνη, ῥοδοδάφνη, and ἀγριοδάφνη, according to *Sibthorp*. The latter name agrees with that of Theophrastus, and therefore strongly confirms the identity of the plants. This most elegant shrub is abundant on the banks, and in the dry beds of rivers and torrents, throughout Sicily; but I never observed it growing in similar situations where the lava of Mount Etna occurs. A variety with *white* flowers is sometimes found, according to *Cupani.*

BORAGINEÆ.

82. Heliotropium Europæum.—European Turnsole.

Ἡλιοτρόπιον τὸ μέγα. *Diosc. lib.* iv. *cap.* 193. Ἡλιοτρόπιον.—*Theoph. lib.* vii. *cap.* 14. This plant is called *Turnsole*, from its *flowers* turning in the direction of the sun, but Dioscorides relates from its *leaves* so doing, ἡλιοτρόπιον δὲ ἀπὸ τοῦ συμπεριτρέπεσθαι τὰ φύλλα τῇ τοῦ Ἡλίου κλίσει. There is a variety with smaller flowers, which is the *H. parviflorum. Guss.*

Very common in dry waste ground.

83. Anchusa tinctoria.—Dyers' Bugloss.—*Fl. Græc. vol.* ii. *tab.* 166.

Ἄγχουσα. *Diosc. lib.* iv. *cap.* 23. Also of *Theoph. lib.* vii. *cap.* 9. The root was used for dyeing and colouring; on which Dioscorides remarks, χρῶνται, δὲ καὶ οἱ μυρεψοὶ τῇ ῥίζῃ πρὸς τὰς στύψεις τῶν μύρων.

84. A. Italica, *Pers.* (A. paniculata, *Sibth.*) Italian Bugloss.—*Fl. Græc. vol.* ii. *t.* 163.—*Bot. Mag. vol.* xlviii. *t.* 2197.

This may probably be the Αγχουσα ἑτέρα, ἢ Αλκιβιάδιον. *Diosc. lib.* iv. *cap.* 24. A plant abundant in Sicily, and the South of Europe.

85. Cerinthe aspera.—Rough Honeywort.—*Fl. Græc. vol.* ii. *tab.* 170.

Κήρινθον.—*Theoph. lib.* vi. *cap.* 7, according to *Stackhouse*; and *Sibthorp* says it is now named σκαλιξονάκι in Greece.

SOLANEÆ.

86. Verbascum sinuatum.—Sinuate-leaved Mullein.—*Fl. Græc. vol.* iii. *t.* 227.

Φλόμος μέλαινα.—*Diosc. lib.* iv. *cap.* 104, and of *Theoph. lib.* ix. *cap.* 13. Still called φλόμο in Greece. *Sibth.*

87. Hyoscyamus aureus.—Golden Henbane.—*Fl. Græc. vol.* iii. *tab.* 231. *Bot. Mag. vol.* iii. *t.* 87.

This is the second species of ὑοσκύαμος, *Diosc. lib.* iv. *cap.* 69, which has yellow flowers, ἄνθη μηλοειδῆ; it was esteemed a poisonous plant, as he calls it μανιώδης καὶ καρωτικὸς, deleterious and soporiferous.

88. H. albus.—White Henbane.—*Fl. Græc. vol.* iii. *tab.* 230. Perhaps the third species of ὑοσκύαμος of Dioscorides, having white flowers, ἄνθη λευκὴ ἔχων, and according to Dr. *Sibthorp* it still retains its ancient name in Greece.

Most common on waste ground.

89. Atropa Mandragora.—Mandrake.—*Fl. Græc. vol.* iii. *tab.* 232.

Μανδραγόρας.—*Diosc. lib.* iv. *cap.* 76, and *lib.* vi. *cap.* 16: also of *Theoph. lib.* ix. *cap.* 10. Μανδραγουρα hodié, et γοργογάνι quandoque apud Atticos. *Sibth.* Dioscorides relates that it was also called Κιρκαία, *Circæa,* because its root was used as a philter, or love potion, ἐπειδὴ δοκει ἡ ῥιζα φίλτρων εἶναι ποιητική. And Theophrastus says that the root was of use πρὸς ὕπνον καὶ φίλτρα. For the same purpose Mandrakes are mentioned in the book of Genesis, *chap.* xxx. *v.* 14—16. This plant even now possesses somewhat of its most ancient right in modern Greece;—Radicis frustula in sacculis gesta, pro *amuleto, amatorio* hodiè, apud juvenes Atticos in usû sunt. (*Fl. Græc. p.* 27.) And *Maundrell* states (*p.* 61.) that the "women of Samaria are wont to apply it at this day out of an opinion of its prolific virtue." The Mandrake was properly called by Pythagoras ἀνθρωπόμορφος, from its root resembling the form of a man. See the figure in the Flora Græca.

It is named in Sicily, *La Mandragola.*

90. Physalis somnifera.—Clustered Winter-Cherry.—*Fl. Græc. vol.* iii. *t.* 233.

Στρύχνον ὑπνωτικὸν. *Diosc. lib.* iv. *cap.* 73. Στρύχνος ὑπνώδης, *Theoph. lib.* ix. *cap.* 12. According to Dioscorides the bark of the root taken in wine has a soporific virtue, which is milder than opium. Hence Theocritus says the voice of Bombyce was mild or soft, ἁ φωνά δὲ τρύχνα. *Idyl.* x. *v.* 37.

Frequent in woods and hedges; the following species is more rare.

91. P. Alkekengi.—Common Winter-Cherry.—*Fl. Græc. vol.* iii. *t.* 234.

Στρύχνον ἀλικάκαβον, ἢ φυσαλις, *Diosc. lib.* iv. *cap.* 72, where it is mentioned that its red, smooth, round berry enclosed in bladder-like leaves was interwoven in chaplets, ᾧ καὶ οἱ στεφανοπλόκοι χρῶνται καταπλέκοντες τοὺς στεφάνους. Named κερασούλια, by the modern Bœotians.—*Sibth.*

92: Lycium Europæum.—European Box-Thorn.—*Fl. Græc. vol.* iii. *tab.* 236.

Ῥάμνος. *Diosc. lib.* i. *cap.* 120, and *Theoph. lib.* iii. *cap.* 17, ῥάμνος in *Græc. hodiurn. secund. Sibth.* The word ῥάμνοι occurs, *Theocritus*, *Idyl.* iv. *v.* 57.

Observed in hedges, but more abundantly in the South of the Island.

93. Solanum Sodomæum.—Black-spined Nightshade, or Apple of Sodom.—*Fl. Græc. vol.* iii. *tab.* 235.

It is the tempting and deceitful fruit of this plant, which grows abundantly, according to travellers, on the shores of that well known lake of Avernus the Dead Sea,—which, as soon as bitten, becomes dry dust-like ashes. The berry or apple, is large, smooth, shining, and not unlike a golden Pippin; the Sicilians name it, *Il pomu d'oru;* a small insect frequently punctures it, and converts the inside into powder, leaving the skin whole, and of its original colour. From this arose the story of the delusive apple,

———————which grew
Near that bituminous lake where Sodom flamed.

(See *Milton. Par. Lost.* x. *v.* 561.)—Tacitus in the 5th book, *Hist. cap.* 7, relates the same thing; "cuncta spontè edita aut manû sata, sive herbâ tenus aut flore, seu solitam in speciem adolevere, atra et inania velut in cinerem vanescunt." Josephus likewise speaks of the fruit in the following words, —κἂν τοῖς καρποῖς σποδιὰν ἀναγεννωμένην, οἳ χρόαν μεν ἔχουσι τοις ἐδωδίμοις ὁμοίαν, δρεψαμένων δὲ χερσὶν, εἰς καπνὸν ἀναλύονται καὶ τέφραν. —*Bell. Jud. lib.* v. *cap.* 5.—Consult also *Wisdom. cap.* x. *v.* 7, and *Tertuliani Apol. cap.* 40. The description of the berry in the Flora Græca is so good, that I have here transcribed it:—Bacca depresso-globosa, diametro unciali vel sesquiunciali, flava, nitida, glaberrima, calyce persistente, longè breviori, suffulta; intùs viscida, amara, nauseosa, notante Hermanno maximè deleteria: demùm pulverulento-sicca, friabilis, undè, ut videtur, nomen specificum.—(*p.* 30.) Common on waste ground, along the coast of Sicily and Calabria; I observed it in particular at Messina and Reggio.

LABIATÆ.

94. Rosmarinus officinalis.—Common Rosemary.—*Fl. Græc. vol.* i. *t.* 14.

Λιβανωτίς. *Diosc. lib.* iii. *cap.* 87, and *Theoph. lib.* ix. *cap.* 12. Both these authors mention two species. Δενδρολίβανον, hodiè. *Sibth.*

On hilly places, and in the dry beds of streams.

95. Salvia officinalis.—Officinal Sage.

Ἐλελίσφακον.—*Diosc. lib.* iii. *cap.* 40.—Ἐλελίσφακος.—*Theoph. lib.* i. *cap.* 2.—Σφακος vel Σφάκελος, species culta, apud *Stackhousium.* The apples or tumours on the Sage, φασκομηλιά, (*i. e.* σφακομηλια) the effect of puncture of a species of Cynips, are made into a conserve with honey, in Zante. *Sibthorp.* "In Cretâ ac etiam in quibusdam Apuliæ et Calabriæ locis, Salvia in cacumine gignit tubercula quædam, gallarum instar, subalbida." *Diosc. Mathiol.* 378.—(See *Walpole's Turkey, p.* 249.) I have not heard of their being so used in Sicily. This sort varies sometimes with narrow leaves;—β. angustifolia.

96. Ajuga Iva.—Iva Bugle.—*Fl. Græc. vol.* vi. *tab.* 525.

Χαμαιπίτυς.—*Diosc. lib.* iii. *cap.* 175.—secund. *Sibth.*

97. Teucrium Polium.—White-leaved Germander.—*Fl. Græc. vol.* vi. *t.* 535.

Πόλιον ὀρεινόν. *Diosc. lib.* iii. *cap.* 124.—Πόλιον. *Theoph. lib.* i. *cap.* 16.—Παναγιόχορτον, ἢ ἀμάραντο, *Holy-herb*, or *Amaranth*, in Romaic, according to *Sibthorp.* It is called ἀιγιαλοι in this verse from *Apoll. Arg. lib.* i. *v.* 454,—

Φυλλάδα, χευάμενοι πολιοῦ πρόπαρ αἰγιαλοῖο.

Pliny says of it,—apud Græcos *Polion* herbam, inclytam Musæi et Hesiodi laudibus. (*Hist. Nat. lib.* xxi. *cap.* 7.)

On Mount Hybla, and the limestone hills near Syracuse.

98. Satureja capitata.—Head-bearing Savory.—*Fl. Græc. vol.* vi. *tab.* 544.

Θύμος. *Diosc. lib.* iv. *cap.* 44. *Stackhouse* refers the θύμον, *Theoph. lib.* vi. *cap.* 2, to Thymus vulgaris. That plant, as well as *S. capitata*, are both called θυμάρι, in Modern Greece, according to *Sibthorp*: which name is probably common to several sorts of thyme-like plants. Θυμὶδ θυμάρι, ἢ θρούμπι, hodiè. *Sibth.*

Bees delight in these species, and to them may be attributed the celebrity of the Hyblean honey. Still different Sages, Thymes, Germanders, Mints, and other aromatic herbs, cover the bare calcareous range of Mount Hybla; and from their flowers the wild buzzing bee, ἁ βομβεῦσα μέλισσα, still extracts most delicious honey, as in the time of Theocritus. Honey is exported from Syracuse.

99. Lavandula Stœchas.—French Lavander.—*Fl. Græc. vol.* vi. *tab.* 549.

Στίχας.—*Diosc. lib.* iii. *cap.* 31. Found in the islands called Stæchades now *les Isles d'Hières* near Marseilles, and received its name from them as Dioscorides relates. Its Romaic appellation signifies *Black-head*, Μαυροκεφάλι. *Sibth.*

100. Origanum Onites.—Woolly-leaved Marjoram.

Ὀνῆτις, *Diosc. lib.* iii. *cap.* 33, secundùm *Sprengelium.*

Hab. propè Syracusas.—*Bocc.*

PEDALINÆ.

101. Sesamum Indicum.—Indian Sesame, or Oily-Grain.

Cultivated and commonly named *Giuggiolena. Stackhouse* refers the Σήσαμον of *Theoph. lib.* viii. *cap.* 3, to S. orientale. *Linn.* The seeds of the *Giuggiolena* are eaten by the Sicilians scattered on bread, as coriander, cummin, caraway seeds, &c. This is an ancient custom mentioned by Dioscorides,—σπέρμα μέλαν, δριμύ, εὔωδες, καταπλασσόμενον εἰς ἄρτους. An oil is expressed from the seeds of the Sesame.

VERBENACEÆ.

102. Vitex Agnus Castus.—Common Chaste-tree.

Ἄγνος ἢ λύγος. *Diosc. lib.* i. *cap.* 136. Ἄγνος. *Theoph. lib.* i. *cap.* 22. Now named καννακίττα; in Cyprus Αγνειὰ; in Zante, λυγειὰ, on the authority of Dr. *Sibthorp.*—“Cory remarks, that the λύγινοι στεφανοι, (*chaste garlands,*) of which the ancients speak, are still used by the Greeks. “It is reported,” says Gerarde, “that if such as journey or travel, do carry with them a branch or rod of Agnus Castus in their hand, it will keep them from merrygals and weariness!” *Herbal,* 1202. This passage alludes to the opinion noticed by Dioscorides: δοκει δὲ καὶ κωλυτήριον εἶναι ἐν ὁδοιπορίαις παρατριμμάτων, ἔιτις ῥάβδον ἀυτῆς παρὰ χεῖρα κρατοίη,—and Hasselquist observes that “pilgrims make staffs of it.” *p.* 130.—(See *Walpole's Turkey, note* 14. *p.* 239.) Dioscorides also mentions, that the plant was called ἄγνος, *chaste,* because women strewed the leaves of it on their beds to preserve their chastity during the festival of the θεσμοφόρια. Refer likewise to Eustathius. *Il.* ζ. *p.* 768. *Edit. Basil.* and *Pliny, Hist. Nat. lib.* xxiv. *cap.* 9.

It is frequent on the banks of rivers in Sicily, and often found with the Oleander.

ACANTHACEÆ.

103. Acanthus mollis.—Soft Bear's Breech.

Perhaps this is the *soft acanthus,* ὑγρὸς Ἄκανθος, of Theocritus, *Idyl.* i. *v.* 55.

104. A. Spinosus.—Thorny Bear's Breech.—*Bot. Mag. vol.* xliii. *t.* 1808.

Ἄκανθα *Diosc. lib.* iii. *cap.* 19. *Sibth.* In Zante it is now called μουτρίνα.—*Sibth.* It is probable, that one of the several species of ἄκανθα mentioned by Theophrastus, may be referred to this plant.

This is more abundant in the Island, than the preceding kind.

PRIMULACEÆ.

105. Cyclamen hederæfolium.—Ivy-leaved Sow-bread. *Bot. Mag. vol.* xxv. *t.* 1001.

I take the κυκλάμινος, *Diosc. lib.* ii. *cap.* 194, to be this species, where it is well described. Theocritus has, τὰν κυκλάμινον ὄρυσσοὶ, *Idyl.* v. *v.* 123. Under hedges and shady places.

PLUMBAGINEÆ.

106. Statice sinuata.—Scallop-leaved Thrift.—*Fl. Græc. vol.* iv. *tab.* 301. *Bot. Mag, vol.* ii. *t.* 71.

Τριπόλιον. *Diosc. lib.* iv. *cap.* 135, according to *Sibthorp.*

Πρώφασις, ἢ Προβάκι, hodiè. *Sibth.* I first noticed this species on the shore of the Porto Grande at Syracuse; and afterwards in several places on the South Coast.

CHENOPODEÆ.

107. Atriplex Halimus.—Tall Shrubby Orache.

Ἄλιμον. *Theoph. lib.* iv. *cap.* 20,—apud *Sprengelium:* at *Stackhousius* ad Salicorniam fruticosam refert.

Hanc speciem in Siciliâ spontè crescentem non vidi.

POLYGONEÆ.

108. Rumex bucephalophorus.—Basil-leaved Dock.—*Fl. Græc. vol.* iv. *tab.* 345.

Λάπαθον μικρὸν. *Diosc. lib.* ii. *cap.* 140.—*Sibth.*

At Palermo; "nel Piano della Consolazione." *Biv.*

LAURINEÆ.

109. Laurus nobilis.—Ancient Laurel, Bay Tree.—*Fl. Græc. vol.* iv. *t.* 365.

Δάφνη. *Diosc. lib.* i. *cap.* 107, also of Theophrastus. It still retains its ancient name δάφνη in modern Greece. *Sibth.* The Laurel was held in the greatest estimation by the ancients. It was an emblem of victory, and of peace. For the beautiful fable of Daphne, see *Ovid Met. lib.* i. *fab.* 10. The victors in the Pythian games were crowned with laurel, which Pindar calls, Ποία Παρνασία. The bearing of boughs of this tree, in honour of Apollo, was a great festival, and named Δαφνηφόρια. It was sacred to Apollo, as we learn from Theocritus, *Epigram*, i. *v.* 3, ταὶ δὲ μελάμφυλλοι Δάφναι τὶν, Πύθιε Παιάν. Claudian calls the laurel *Prophetic*, Venturi præscia; it was also accounted conducive to inspiration; hence Homer (*Hymn in Apol. v.* 394.)

> ——————————ἀγγέλλουσι θέμιστας
> Φοίβου Απόλλωνος χρυσαόρου, ὅττι κεν εἴπῃ,
> Χρείων ἐκ Δάφνης γύαλων ὕπο Παρνησοῖο.

Prophets used to have a rod of laurel, see *Hesiod Theog. v.* 30; they did even eat the leaves, Δαφνηφάγοι; and Tibullus says of the Sybil,

> ——————— sacras innoxia Laurus
> Vescar.———

Δαφνημαντέια, the divination by Laurel-leaves, was likewise practised in Greece and in Sicily, therefore Theocritus begins the second Idyl called *Pharmaceutria*, thus, Πα μοί ταὶ Δάφναι; and the noise, or crackling in burning was carefully observed, as is explained at *v.* 23, &c., of the same Idyl.

> ————————Δάφναν
> Αἶθω· χ᾽ ὡς αὐτὰ λακεῖ μέγα, καππυρίσασα,
> Κἤξαπίνας ἅφθη.———

Confer also Virgil, *Ecl.* viii. *v.* 82; and *Lucretius*, vi. 153, states the same thing,

> Nec res ulla magis quam Phœbi Delphica Laurus,
> Terribili sonitû flammâ crepitante crematur.

It was a coronary plant, and supposed never to be struck by lightning. Tiberius used to wear a crown of laurel as a protection against lightning, according to the following narration of Suetonius;—Tonitrua tamen propter modum expavescebat, et turbatiore cœlo nunquam non *coronam Lauream* capite gestavit. (*Vit. Tib. cap.* 69). And it is related by the same author, that Augustus wore a skin of the sea-calf (*Vitulus marinus*) for the same purpose.—Conf. *Vit. Aug. cap.* 90, also *Plin. lib.* ii. *cap.* 55. A piece of badger's skin and a fox's brush, have taken the place of a laurel-wreath and a seal's-skin, as modern preservatives against lightning, both in Italy and Sicily, and are now generally attached to the harness of Horses, Mules, &c.

The wood was not much used; although Hesiod mentions that the most durable beams for ploughs were of laurel.

> Δάφνης δ', ἢ πτελέης, ἀκιώτατοι ἱστοβοῆες.—(*Op. et dies. v.* 435.)

And old people made staves of it, vide *Theoph. lib.* v. *cap.* 8.

According to Dioscorides, an oil was extracted from the berries and used medicinally. It was called, Δαφνελάιον, or ἔλαιον δάφνινον, and the berries, Δαφνίδες. *lib.* i. *cap.* 50.

The cave of Polyphemus in Sicily was Δάφνῃσι κατηρεφής, as Homer describes it. The Bay-tree, *il lauru*, grows spontaneously throughout the island.

THYMELÆÆ.

110. Daphne Gnidium.—Flax-leaved Daphne.—*Fl. Græc. vol.* iv. *tab.* 356.

Θυμέλαια, *Diosc. lib.* iv. *cap.* 173,—apud *Floram Græcam.*

Σφλόμο, hodiè vocatur.—*Sibth.* Observed amongst sand on the sea-beach near Sciacca.

ARISTOLOCHIÆ.

111. Aristolochia longa.—Long-rooted Birth-wort.

Ἀριστολοχία μακρά. *Diosc. lib.* iii. *cap.* 5.—Ἀριστολοχία. *Theoph. lib.* ix. *cap.* 13. A plant of great use in the ancient Pharmacopsæia. Dr. *Sibthorp* asserts that it is now called ῥίζα, and the roots are sent from Zante to Italy for medicine.

112. A. rotunda.—Round-rooted Birth-wort.

Αριστολοχία στρογγύλη. *Diosc. lib.* iii. *cap.* 4.

CYTINEÆ.

113. Cytinus Hypocistis.—Rock-rose Cytinus.

Ὑποκιστις. *Diosc. lib.* i. *cap.* 127.—*Hypocistis, Plin. lib.* xxvi. *cap.* 8. The former author relates, φύεται δὲ παρὰ τὰς ῥίζας τοῦ κίστου ἡ λεγομένη ὑποκιστις ——ὑπ' ἐνίων δὲ κύτινος καλουμένη, the Hypocistis, or, as it is called by some, Cytinus, grows on the roots of the Cistus; and the latter says nearly the same thing,—"Hypocistis—nascitur sub cisto, undè nomen." This curious plant escaped my notice; but it is common in the Island (according to Dr. *Presl*,) growing parasitically upon the roots of the several kinds of Cistus, as its ancient name implies.

EUPHORBIACEÆ.

114. Ricinus communis.—Castor Oil Tree, or Palma Christi.—*Bot. Mag. vol.* xlviii. *t.* 2209.

Κίκι ἢ κρότων. *Diosc. lib.* iv. *cap.* 164. Κρότων. *Theoph. lib.* i. *cap.* 16. Dioscorides says it was called κρότων, because the seed resembles the animal (*Tick*),—ὠνόμασται κρότων διὰ την προς τὸ ζῶον ἐμφέρειαν του σπέρματος. Its leaves are like those of the Plane-Tree, (*i.e.*, folia palmata, lobis lanceolatis), but they are larger and smoother,—φύλλα δὲ ὁμοια πλατάνῳ, μέιζονα δὲ καὶ λειότερα. The Castor-oil is obtained by pounding the seeds: though, according to Dioscorides, the oil was formerly not used in medicine, but for lamps and plasters,—ἐξ οὗ (καρπου) ἀποθλίβεται τὸ λεγόμενον Κίκινον ἔλαιον, ἄβρωτον μέν, ἄλλως δὲ χρήσιμον ἐις λύχνους καὶ ἐμπλάστρους.—See also *Herod. Euterpe, cap.* 94, and *Strabo Geogr. lib.* 17. For the manner of making this famous oil, confer *Diosc. lib.* i. *cap.* 38. The seeds were given as a purgative. *Bochart* and others consider the *Gourd* mentioned in *Jonah, chap.* iv. *v.* 6. to be this plant: the Hebrew word is

Kikajon. "The Lord God prepared a *Gourd* (or *Palm Crist*), and made it to come up over Jonah, that it might be a shadow over his head, to deliver him from his grief." The very great quickness and luxuriance of growth remarkable in this species give a strong proof in identifying the two plants.

The Palma Christi, although originally introduced from India, is cultivated and grows most luxuriantly in Sicily: and much oil, *Oliu di Ricinu*, is expressed from the seeds.

115. Euphorbia dendroides.—Tree Spurge.—*Fl. Græc. vol.* v. *tab.* 470.

Τιθυμάλος δενδρόειδης. *Diosc. lib.* iv. *cap.* 165.

On the mountains near Palermo, *Monte Pellegrino*, &c.

116. E. Chamæsyce.—Ground-fig Spurge.—*Fl. Græc. vol.* v. *tab.* 461.

Χαμαισύκη, ἢ Σύκη. *Diosc. lib.* iv. *cap.* 170.

Common in waste and uncultivated ground.

117. E. Myrsinites.—Glaucous Spurge.—*Fl. Græc. vol.* v. *tab.* 471.

Τιθυμαλος θῆλυς, ἢ Μυρτίτης, ἢ Καρυΐτης, ἢ Μυρσινίτης. *Diosc. lib.* iv. *cap.* 165.—Μυρτίτης, ἢ τιθυμαλος λευκός. *Theoph. lib.* ix. *cap.* 12.

The seed or fruit was named καρυον.

URTICEÆ.

118. Ficus Carica.—Common Fig-Tree.

Σύκη, *Diosc. lib.* i. *cap.* 184, and *Theoph. lib.* i. *cap.* 8. &c. Now named Συκιὰ in Laconia: the flowers of the wild fig, ἐρινεός, are at this day used for the caprification of the cultivated fig, in various parts of Greece. *Sibth.* The ancient word for this practice is συκάζειν, which is explained by τὰ ἐρινὰ συλλέγειν καὶ περιαρτᾶν.—Vide *I. Pollux*, *p.* 143. The custom is mentioned in Aristotle, *H. An. lib.* v. *c.* 26. "At Athens," says Mr. Hawkins, "they take the wild figs (ἐρινοὶ) in June, when the insect shows itself in them, string a few and suspend them on the branches of the domestic fig-tree, without which, it is believed, all the fruit would drop. They also engraft a shoot or two of the wild fig-tree on the domestic sort, which answers the same purpose. The caprification of figs is practised in Santorini nearly in the manner described by Tournefort, except that the term ὀρίνια must be substituted for that of ὄρνος; and the following particulars should be added:—the ὀρίνια fructifies first in December and January, when it produces the *Prodotes;* and secondly, in March, when it produces the *Lates*, both which are used for caprifying."—(*Walpole's Turkey, note*, xxiii. *p*. 241.) Pliny describes this practice, *lib*. xv. *cap*. 19. and *lib*. xvii. *cap*. 27; and Theophrastus gives an accurate account of caprification, —ἐρινασμος, *lib*. ii. *cap*. 9. The insects of the wild figs he names ψῆν and κὶντρις, the *Cynips Psenes* of Linnæus. They are mentioned in this verse from Aristophanes. *Av*. 590.

Εἰθ' οἱ κνῖπες καὶ ψῆνες ἀὲι τὰς συκὰς οὐ κατέδονται

Σύκινοι ἄνδρες. *Theocr*. *Idyl*. x. *v*. 45, *Useless Men*, *i. e.*, because the wood of the fig-tree was accounted of no use.—*Briggs*. Theophrastus says the wood was soft, fleshy, and porous, *lib*. i. *cap*. 8. It was sometimes used for making statues, as Theocritus, in *Epigram* iv. *v*. 2. describes, σύκινον εὑρήσεις ἀρτιγλυφὲς ξόανον.

So Horace makes a statue say.—(*Serm*. viii. 1.)

Olim truncus eram *Ficulnus*, inutile lignum.

Dr. *Presl* enumerates no less than forty varieties of the fig (*ficu*) which are cultivated in Sicily. The dried fruit is exported.

The fig-tree will grow in any soil, but it prefers a dry and rocky ground.

119. F. Carica; var. β. sylvestris.—Wild Fig-tree.

Αγρία σύκη. *Diosc. lib*. i. *cap*. 185.—'Ερίνεος. *Theoph. lib*. iv. *cap*. 16. The figs are named ἐρινα. So *Athen. lib*. iii., τὸ δένδρον ἡ ἀγρία Σύκη ἐξ ἧς τὰ ἐρινα. According to Theophrastus, (*lib*. v. *cap*. 7.) the wood of this tree was excellent for ἔργα πολυτελῆ. Theocritus states that the branches of it, ὄρπηκας

Ἐρινεῦ εὐκεάτοιο, were used for making chariots, *Idyl.* xxv. *v.* 248. Homer confirms this statement in *Il.* φ. *v.* 37. Theocritus gives to the wild fig-tree the epithet τανύφλοιος. See *Idyl.* xxv. *v.* 250. Homer mentions a large tree which was on a rock near Charybdis.—(*Odys. lib.* xii. *v.* 103.)

> Τῷ δ' ἐν Ἐρινέος ἔστι μέγας φύλλοισι τεθηλώς·
> Τῷ δ' ὑπο δῖα Χάρυβδις ἀναῤῥοιβδεῖ μέλαν ὕδωρ.

It is the Caprificus of Pliny. The wild fig-tree, *ficu Salvaticu*, or *Caprificu*, grows on old walls, in the crevices of rocks, &c.

AMENTACEÆ.

120. Platanus orientalis.—Palmated Plane-Tree.

Πλατάνος. *Diosc. lib.* i. *cap.* 108, also of *Theoph. lib.* i. *cap.* 15.—πλατάνος and πλατανίστος, *Theocritus*, *Idyl.* xxii. *v.* 41, and *Idyl.* xxv. *v.* 20. Theophrastus (*lib.* iv. *cap.* 14,) mentions two plane-trees which were said to have been planted by Agamemnon. This tree was held in great estimation by the ancients. Herodotus relates that Xerxes, when marching his army in Lydia, observed a Plane-Tree, which he presented with a golden ornament on account of its great beauty. *Vide Polym. cap.* 31. The same circumstance is narrated by *Ælian*, *lib.* ii. *cap.* 14. Homer mentions a sacrifice made καλῇ ὑπὸ πλατανίςῳ *Iliad*, ii. *v.* 307. The tree was named πλατανος, from πλατυς, because of its wide-spreading branches, which afford an agreeable shade. So Theocritus calls it σκίερα, confer *Idyl.* xviii. *v.* 44. 46, and *Idyl.* xxii. *v.* 76. Moschus says, *Idyl.* v. *v.* 11.

> ἀυτὰρ ἐμοὶ γλυκὺς ὕπνος ὑπὸ πλατάνῳ βαθυφύλλῳ

In like manner Horace,—

> Cur non sub altâ vel *Platano*, vel hâc
> Pinû jacentes.———

And Virgil,—

> Jamque ministrantem Platanum potantibus umbras.

Pliny also remarks (*lib.* xii. *cap.* 1.), "Quis non jure miretur arborem *Umbræ* gratiâ tantum ex alieno petitam orbe? Platanus hæc est per mare Ionium in Diomedis insulam ejusdem tumuli gratia primum invecta; indè in Siciliam transgressa, atque inter primas donata Italiæ——Dionysius prior Siciliæ tyrannus, Rhegyum in urbem (hodiè *Reggio*) transtulit eas, domus suæ miraculum:—tantumque posteà honoris increvit, ut mero infuso enutriantur. Compertum id maximè prodesse radicibus; docuimusque etiam arbores vina potare." I did not observe any very large Plane-Trees in Sicily; but in Greece, they arrive at an enormous size. Pliny mentions several, *lib.* xii. *cap.* 1. Dr. E. D. Clarke describes a marvellous one in the Island of Cos, and another in the straits of Thermopylæ "of unknown antiquity, self-sown in its origin, and one of many that may have flourished upon the spot ever since the Lacedæmonian soldiers were seen at the fountain combing their hair, and amusing themselves with gymnastic exercises." And see *Dodwell's Tour through Greece, vol.* i. *p.* 121. 150; and *vol.* ii. *p.* 305.

Dioscorides calls the round seed-vessels, τὰ Σφαιρία.

121. Castanea vesca.—Spanish Chestnut.

Κάστανα, ἢ Σαρδιαναὶ βάλανοι, ἢ Δίος βάλανοι.—*Diosc. lib.* i. *cap.* 146, and Διὸς βάλανος.—*Theoph. lib.* iii. *cap.* 3. In Sicily the chestnut grows to an enormous size. The famous *Castagnu di centu Cavalli*, which is said to be the largest and most ancient tree in Europe, measures near the root 160 feet in circumference. The Sicilians assured me that it was one tree, although from appearance it resembles seven trees; the interior of the trunks is decayed. On Mount Etna there are three other large ones. The *Castagnu di S. Agatha* is 70 feet in circuit, *C. della Nave*, 64 feet at the root; and *C. della Navella* 57 feet in circumference (*Presl*). Chestnuts afford the poorer class of people their principal food in some parts of the isle; bread, puddings, &c., are made of the flour.

122. Quercus Ilex.—Evergreen Oak. Holm Oak.

Probably the Αρία, *Theoph. lib.* iii. *cap.* 16, which *Stack-*

house makes Cratægus Aria. Since this tree retains the name Αρεος, in modern Greece (*Sibth.*), we can with greater reason refer the species of Theophrastus to it. The Ilex, *Ischiu*, and the Cork, are frequent in the natural woods in Sicily.

123. Q. Suber.—Common Cork-tree.

Φελλὸς, καὶ φελλόδρυς. *Theoph. lib.* iii. *cap.* 16, according to *Stackhouse* and *Sprengel.* Theophrastus relates that all trees die if they be barked all round, except the Cork-tree, and that is improved by it,—κοινὴ μὲν δὴ πᾶσι φθορὰ τοῦ φλοιοῦ περιαιρεθέντος κύκλῳ πλὴν εἰ ἄρα φελλοῦ, τοῦτον γάρ φασι καὶ εὐσθενεῖν, *lib.* iv. *cap.* 18, that is, because the bark of the Cork-tree is double, and by taking off the exterior one every three or four years, the tree flourishes much longer, than if it was allowed to remain.

Pindar gives a simile, comparing a person who cannot sink to cork, which swims on the surface of the water,—

> Ἅτε γὰρ εἰνάλιον πόνον ὀ-
> χοίσας βαθὺ σκευᾶς ἑτέρας, ἀβά-
> πτιστός εἶμι, φελλὸς ὣς,
> Ὑπὲρ ἕρκος ἅλμας.—

Pyth. ii. *v.* 144. The Bark (*cortex*) of the Cork-tree has been long used for the stopples of vessels, and must be so interpreted in *Horat. Carm. lib.* iii. *Od.* viii. *v.* 10.

124. Q. coccifera.—Kermes Oak.

Πρίνος. *Diosc. lib.* i. *cap.* 145, and also of *Theoph. lib.* iii. *cap.* 16, which is said to bear a scarlet κόκκος (Gall-apple, occasioned by the puncture of an insect) in addition to its acorn,—φέρει δὲ καὶ παρὰ τὴν βάλανον κόκκον τινὰ φοινικοῦν. This is the κόκκος βαφικὴ Gall, or Gall-nut used in dying, *Diosc. lib.* iv. *cap.* 48. It is mentioned by Horace, *Serm. lib.* ii. *Sat.* vi. *v.* 103.

> ——————Rubro ubi *cocco*
> Tincta super lectos canderet vestis eburnos.

Pausanias, *Phoc. lib.* x. *cap.* 36, has well described this Oak, and its coccus. The tree is at present called πρινάρι in Greece, and πρίνο in the Island of Cyprus. The πρίνου κόκκοι, also are now named πρινόκοκκι, *Sibth.* Theophrastus describes the acorn of the πρίνος, as small, and which some call ἄκυλος. Theocritus feigns the shepherd Lacon preferring these acorns to mountain apples,—

> 'Ουδὲ γὰρ ουδ' ἀκύλοις βρομαλίδες, ἀι μὲν ἔχοντι
> Λεπτὸν ἀπὸ πρίνοιο λεπύριον, ἀι δὲ μελιχραί.—(*Idyl.* v. *v.* 94.)

According to Dioscorides, the acorns of this species are more powerful in medicine than those of the other oaks,—ἰσχυρότεραι δὲ τῶν Δρυίνων ἀι πρίνιναι βάλανοι τῇ δυνάμει ἐισίν.

The wood, as Theophrastus relates, *lib.* v. *cap.* 8, was good for making axle-trees for waggons, and yokes for lyres and harps, and was likewise suitable for building chariots and carts; and Hesiod says it was the best for making handles for ploughs, πρίνου δὲ γύην (*Op. et dies.* v. 436.) Hence the term πρίνινοι γέροντες (*Aristophanes Acharn.* *v.* 180), means strong old men, or as we say, " Hearts of oak."—*Briggs.*

125. Q. Esculus.—Small prickly-cupped Oak.

Φηγὸς. *Diosc. lib.* i. *cap.* 145, and of *Theoph. lib.* iii. *cap.* 9, where it is called also ἀγρία Δρυς, the acorns of which were esteemed the sweetest,—γλυκύτατος γὲ ὁ τῆς φηγοῦ καρπος. Hence the derivation of the words φηγὸς α φαγειν, and Esculus from Esca. We learn from Pausanias (*lib.* viii. *cap.* 1.) that the Arcadians of old ate the acorns of this oak,—τὰς βαλάνους τῆς φηγοῦ, also from *Apollon. Rhod. Argon. lib.* iv. *v.* 264, and *Plin. lib.* vii. *cap.* 56. Not only were the acorns of Q. coccifera and Esculus used for food, but also those of the Ilex, which are agreeable and nourishing. There is however much reason to suppose that *chestnuts*, which were named in the times of Theophrastus and Dioscorides, *Jupiter's acorns*, and *Sardian acorns*, (*Vide suprà n.* 121.) are often alluded to, when we read of people having lived upon *acorns*, βαλανηφάγοι ἄνδρες in Europe; but in Africa, *Dates* are signified, because we know they were likewise called by Herodotus and Dioscorides *acorns*, and *Palm-acorns*, (*Vide infra*

a. 147). Theocritus says σκιερὴν δ' ὑπὸ φηγὸν, *Idyl.* xii. *v.* 8. From the following passage in Ovid (*Met.* i. *fab.* 9), we learn that the victors at the Pythian games were crowned with a branch of this tree,—

> His juvenum quicunque manû pedibusve, rotâve,
> Vicerat *Esculeæ* capiebat frondis honorem.

(*To be concluded in our next Number.*)

NOTICE OF A COLLECTION OF ALGÆ, COMMUNICATED TO Dr. HOOKER BY THE LATE Mrs. CHARLES TELFAIR, FROM "CAP MALHEUREUX," IN THE MAURITIUS; WITH DESCRIPTIONS OF SOME NEW AND LITTLE KNOWN SPECIES.

By W. H. Harvey, Esq.

FUCOIDEÆ.

1. **Sargassum** *onustum*, (*Ag. Syst.* 305); caule tereti filiformi flexuoso ramosissimo densè setoso, ramis aphyllis, vesiculis copiosissimis sphæricis glandulosis sæpè mucronatis petiolatis, petiolo filiformi, receptaculis lanceolatis subterminalibus.

A highly beautiful species, remarkable for its profuse glandular vesicles and densely setose branches. Receptacles elongated, cylindrical, forming racemes round the tops of the branches and ramuli: leaves very few, minute, very variable in shape, either obovate, lanceolate or linear, spinuloso-dentate, the nerve seldom reaching to the middle.

2. Sargassum *cristæfolium*, (*Ag. Syst. p.* 297); caule plano elongato alterne ramoso, foliis fasciculatis carinatis obovatis obtusis seminerviis spinuloso-dentatis laminâ dentatâ supernè coronatis, vesiculis paucis marginatis, receptaculis "*conglomeratis.*" (*Ag.*)

This curious species, which is at once distinguished by the very peculiar *lamina* or duplication of the upper surface of the leaf, bears a considerable resemblance to *S. ilicifolium* (*Turn. T.* 51), according to Agardh, to *S. aquifolium*, (*Turn. T.* 50). Stems flat, a line or two broad, simple, pinnated with patent branches; leaves obovate, tapering to the base, obtuse, carinated, mostly recurvo-patent, their nerve reaching half way, margin spinuloso-dentate, furnished on the upper surface with a transverse lamina whose margin is also spinuloso-dentate: vesicles not numerous, large, sphærical, margined, on expanded subfoliaceous stalks. I have not seen the receptacles.

3. Sargassum *obovatum*, (*Harv. MS.*); caule plano alternè ramoso, ramis patentibus, foliis densis oblongó-obovatis subpetiolatis seminerviis serratis, vesiculis sparsis ellipticis vel pyriformibus, petiolo clavato vesicato, receptaculis axillaribus cæspitosis ramosissimis.

Closely allied to *S. vulgare*, from which it chiefly differs in the *obovate* leaves, *vanishing* nerve, *pyriform* vesicles and more *branching* receptacles. Stem robust, simple, flat, pinnated with spreading short alternate branches; leaves densely set, obovate or oblong, tapering from beyond the middle into a short footstalk, the margin mostly entire below, above sharply serrate: vesicles scattered, pyriform, gradually passing into an inflated stalk: receptacles densely tufted, axillary, much branched, sometimes palmate.

4. Turbinaria *denudata*, Bory.—Fucus turbinatus. *Turn. T.* 24.

DICTYOTEÆ.

5. Dictyota *furcellata*, (*Grev.*—Zonaria furcellata, *Ag. Syst. p.* 266); fronde lineari subfiliformi laxè dichotomâ valdè flexuosa intricata, axillis patentibus obtusis, laciniis sensim attenuatis.

This forms large entangled masses of a dark brown colour; the frond is half a line broad, nearly equal throughout, the last segment slightly attenuated, distantly dichotomous, the margin waved and often curling when dry; axillæ patent, obtuse. Fructification single; seeds disposed in close transverse rows.—That this is the *Zonaria furcellata* of Agardh, (whose specimens came from New Holland,) I have little doubt; but I am by no means equally certain that it is specifically distinct from *D. dichotoma*, a common variety of which it much resembles. Among a vast number of specimens, however, in this collection, I could not detect any variation in the form or breadth of the frond: and I am, therefore, willing, for the present at least, to assign it a distinct place.

6. Stylophora *vesicata*, (*Harv. MS.*); fronde membranaceâ foliacea vel polymorpha sinuosa, marginibus inflatis.

The close affinity this curious plant bears to the *Stylophora sinuosa* of Agardh, leaves no doubt of its genus; but it is much to be wished that more perfect specimens than those that have fallen under my observation, could be procured, that we might be enabled fully to describe it.—Root? Frond spreading, ulvoid or foliaceous, of no certain outline, olivaceous, variously plaited and lobed, sinuous, its margin often inflated; colour olivaceous: structure composed of interlacing fibres, connected by membrane, the surface distinctly reticulated. No perfect fruit has been observed, but several specimens were dotted all over with little black specks whose structure I could not satisfactorily ascertain.

7. Padina *Durvillæi*, (Bory, in Duper. *Voy. v.* i. *p.* 147. *t.* 21. *f.* 1.?); frondè latissimâ coriaceâ usque medium stuposâ superne ramosà, ramis flabelliformibus membranaceis crebrè zonatis, margine revoluto.

A fine species; larger, coarser and more closely zoned than *P. Pavonia*, to which, perhaps, it is too nearly allied. Indeed it is next to impossible to fix the limits of the flabellate species of this genus. The colour of Bory's plant is a little different from that of ours, which creates a doubt as to their identity.

FLORIDEÆ.

8. Thamnophora *Telfairiæ*,* (*Hook.* and *Harv. MS.*);

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* Little did we think, whilst naming this plant in honour of the gifted

fronde tenerrima angusta ramosissima, ramis distichis attenuatis, ramulis alternis subulatis, racemis receptaculorum ramulis extremis alternantibus.—(*Tab. CXXV.*)

Root composed of firm, branching, interwoven, cartilaginous fibres: frond 2-3 inches high, nearly a line broad at the

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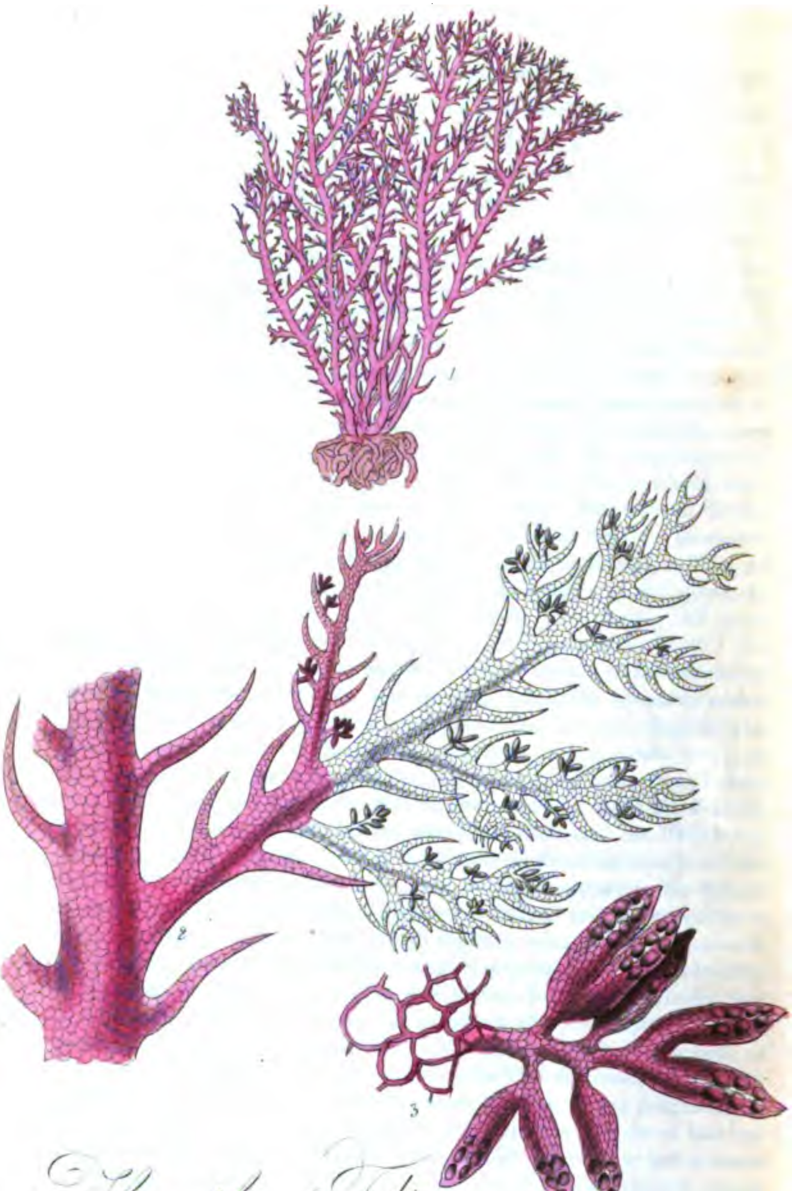
and highly accomplished lady, to whom we are indebted for the collection here described, that, ere it was published, we should have to lament not only her death, but that of Mr. Telfair; which took place, the former in 1832, the latter in the following year. The readers of our Botanical Miscellany need not to be informed what a serious loss science has sustained by these events—a loss which is nowhere more acutely felt than in the Mauritius. We extract from a Mauritius Journal, Le Cernéen, a just tribute to Mr. Telfair's merit, evidently written by one who was intimately acquainted with his character and pursuits. "Death has suddenly smitten one of the most eminent men in this island: Mr. Charles Telfair sunk, on the 14th of this month, under a disease of so violent a character, that a few days of acute suffering terminated his existence, baffling all medical aid, and even preventing him from being sensible of the approaching termination of his life. Mr. Telfair was 56 years of age. All those who knew him, the colonists especially, will deeply regret his death: the name of Telfair has long been, and will always continue to be, associated with the Mauritius. Originally a surgeon on board the squadron which blockaded our ports in 1810, he was among the very few English who have remained here since the change of rulers. It is no doubt owing to his opportunities of understanding and appreciating our manners and character, that he was also among the still smaller number of those whose sentiments towards us have not changed with circumstances. Mr. Telfair has filled high official situations, both in the islands of Mauritius and Bourbon. Government Secretary in the latter, and Private Secretary to Sir Robert Farquhar, in this island, he succeeded in the difficult task of reconciling a full performance of his own duties, with the most winning and condescending attention towards a people who were then suffering under the misfortune of changing, in consequence of the fate of war, both their sovereign and their country. His friends were as numerous after he resigned office as while his influence was all-powerful. Mr. Telfair long held the post of Guardian of vacant Estates and Secretary to the Vice-Admiralty Court. His private character was adorned with the rarest qualities. Great disinterestedness, extreme confidence and boundless generosity have rendered him too careless of his own interest, and occasioned his affairs to be left in some confusion: although the precautions which he had himself adopted, secure the safety of the public funds with which he was intrusted.

"It is eminently by his ardent attachment to the sciences, and especially

CXXV.



Thamnophora Telfairiae.

W.H.Harvey del.

Swan Sc.

base, but toward the summit much attenuated, flat; branches distichous, alternate or irregular, the upper ones more or less pinnate; ultimate ramuli subulate, alternate, their axils rounded: colour rose-red, substance delicately membranaceous, highly reticulated. Receptacles lanceolate, containing a double row of ternate granules, racemose, seated, not in the axils, but either on the inner face of the ramuli or alternating with them on the branches. A very distinct and beautiful plant, distinguished from the other known species of *Thamnophora* by its small size, delicate texture with large reticulations, narrow, almost confervoid fronds, irregular ramification and by the position of the fruit.

Tab. CXXV. Fig. 1. Plant, *nat. size.* *f.* 2. portion of Do. *f.* 3. receptacles:—magnified.

9. Delesseria *rhodantha*, (*Harv. MS.*); caule ramoso, foliis lanceolatis subpetiolatis spinuloso-dentatis tenuissimè transversim striatis seminerviis ad apices ramorum fasciculatis.—(*Tab. CXXVI.*)

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those connected with Natural History, that Mr. Telfair's name is entitled to public esteem. In the pursuit of these he was indefatigable. Nothing which could concur to the benefit of humanity and the progress of knowledge, was indifferent to him. Botany owes many new discoveries to him, and the Flora of Mauritius was enriched by his care. Other lands, and especially this, his country, have been mutually benefited by an interchange of new and useful plants and animals. His name has long been consecrated by science; and he kept up an active and interesting correspondence with many of the learned institutions and the first Naturalists in Europe.

"Gifted with perfect equanimity of temper and a winning simplicity of manners, Mr. Telfair's friendship was as safe as his varied information rendered it instructive and agreeable. His house was open to all, and his hospitality was of the most easy and engaging kind. He granted his esteem and friendship to whomsoever he considered worthy of them, without inquiring to what country the individual belonged.

"It is scarcely a year since we inserted in these pages a few lines, expressive of the regret so justly due to the memory of the wife of him whose death we now deplore; little supposing, while we offered our condolence, that they would so soon be united in the grave. Such is our blindness of futurity! such is the life of this world! A more enduring and happier existence awaits the resurrection of the just!"—*Ed.*

A highly beautiful plant, combining the habit of *Delesseria* with much of the structure of *Amansia.* Root scutate; frond much branched, its lower branches often bare of membrane, thick, cylindrical, woody, opaque, their upper parts beset on all sides with lanceolate distinct leaves, which are often collected round the apices into beautiful flat stellate tufts, resembling expanded roses, a peculiarity to which I have alluded in the trivial name. Leaves furnished with a midrib, which usually vanishes beyond the middle, lanceolate, attenuate, somewhat ovate at the base, closely and transversely striated, ciliato-dentate; the ciliæ often branched or trifid, their apices incurved. Structure exceedingly beautiful, consisting of transverse series of oblong hexagonal cellules. I have seen no capsules, but the ciliæ often contain ternate granules. Colour a deep rose-red.

TAB. CXXVI. Fig. 1. Plant *nat. size.* F. 2. leaf. *f.* 3. portion of a leaf with ciliæ, *f.* 4. granules:—magnified.

10. Laurencia *papillosa.* (*Grev. Syn.* 52. Chondria papillosa, *Ag. Syst.* 203. Fucus thyrsoides, *Turn. T.* 19.) The collection contains some fine specimens of this curious plant.

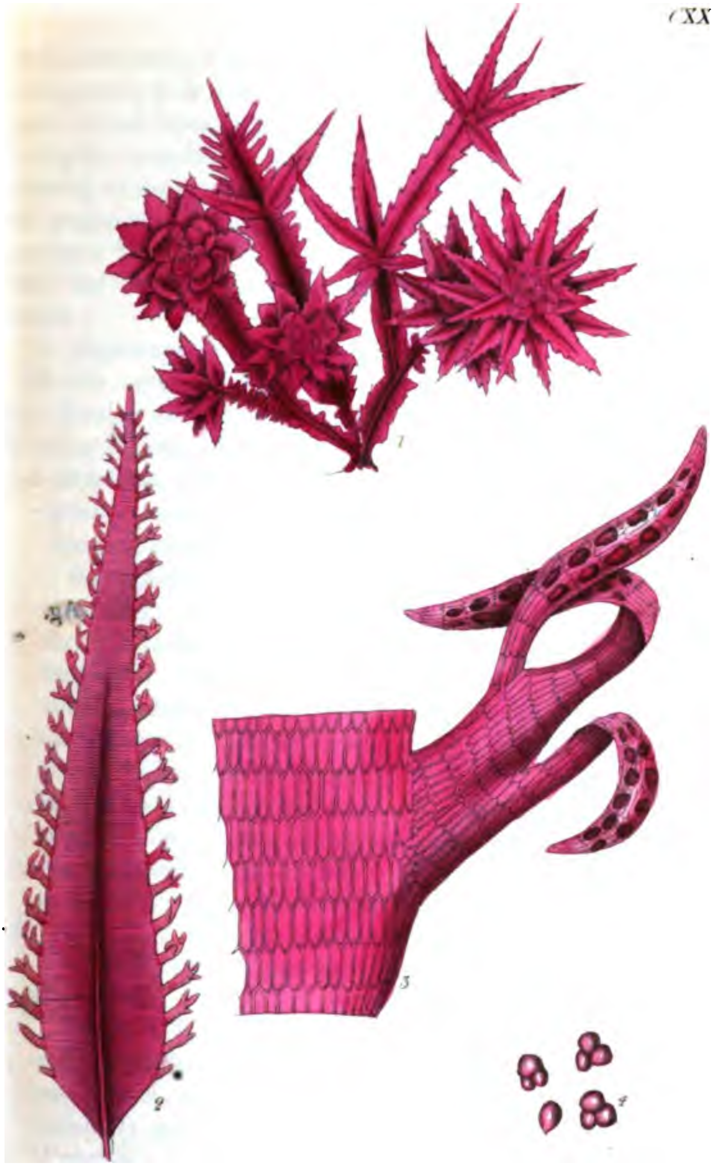
11. Laurencia obtusa? *var. nana.*

This may perhaps be the *L. nana* of Agardh, a question which I have no means of determining. It forms densely interwoven pulvinate strata, $\frac{1}{2}$—1 inch high. Frond subdichotomously branched; branches quadrifarious, spreading, set with a few irregular alternate (never opposite) ramuli, which are again occasionally furnished with a second series; ramuli obtuse, simple, short, slightly narrowed at base: substance cartilaginous.—HAB. Among the creeping roots of various *Caulerpæ.*

12. Gigartina *horrida,* (*Grev.*—Spharococcus horridus, *Ag. Syst. p.* 327); fronde filiformi rugulosa ramosissima gelatinoso-cartilaginea, ramis flexuosis divaricatis aculeatis, aculeis conicis patentibus.

Stems tufted, 2—3 lines in diameter in the thickest part, (ramuli a line broad), branched from the base, in an irregular manner, inclining to dichotomous; branches crowded

CXXVI



Deleſseria rhodantha

W.H.Harvey Esq del

Swan sc

above, alternate or secund, thick, flexuose, wrinkled, divaricating, often with a few patent ramuli or tertiary branches, more or less beset with spreading conical spines, ½—1 line in length: substance gelatinoso-cartilaginous, tough, firmly adhering to paper: colour a dull dark purple. In referring the specimens to Agardh's "*Sph. horridus*," I have been perhaps a little guided by his reference, "ad insulam Franciæ," but independantly of this, our descriptions nearly accord.

13. Hypnea *musciformis* (*Lamour.*).

Of this very variable species, the collection contains a large number of specimens, from which I have selected the following varieties, as most worthy of notice.

α. *divaricata*, (Hypnea divaricata? *Grev.*); fronde compressa, ramis erecto-patentibus, ramulis densissimis elongatis multifidis.

3—6 inches high, tufted; branches short, alternate, spreading; ramuli 2—6 lines long, the smaller quadrifarious, bi-trifid, the larger distichous, very much branched. Capsules (which I have only seen on this variety) abundant, deep-red, depresso-spherical, lateral on the ramuli, mostly ternate. I consider this the *Fucus divaricatus* of Turner (*T.* 181). On a slight inspection (and Turner had only seen a solitary specimen) it might easily be mistaken for a distinct species; but it passes imperceptibly into the following variety, and after that into *F. Valentiæ* of the same author.

β. *ramulosa;* fronde compressa lata, ramis intricatis divaricatis, ramulis densissimis quadrifariis tri-multifidis abbreviatis.

Stems a line broad, much branched, divaricating and entangled, branches long, set on all sides with very dense, short, divaricating, forked or trifid, occacasionally multifid ramuli.

γ. *Valentiæ;* fronde subcompressa filiformi, ramulis densis patentibus subsimplicibus.

Stems elongated, much branched, varying in diameter "from filamentous" to nearly a line broad, branches long and often again much divided, their apices frequently bare of ramuli, below densely set with patent, hair-like, quadrifarious, sub-simple or forked ramuli. *Fucus Valentiæ* (*Turn. T.* 78.) comes near this variety.

δ. *nuda;* fronde filiformi setacea, ramis intricatis, ramulis paucis simplicibus.

More intricately branched and with fewer ramuli than the last.

ε. *intricata.* Intermediate between the two last.

ζ. *pumila;* fronde crinali minuta intricata densissime cæspitosa, ramulis quadrifariis simplicibus.

This variety forms intricate strata, about an inch or less in height. The fronds are filamentous, much branched, and set with spine-like ramuli.

η. *muscoides;* fronde filiformi, ramis elongatis curvatis apice uncinatis nudiusculisque, ramulis distichis patentibus setaceis.

This variety is typified by Turner's *Fucus musciformis*, of which the plate, (*T.* 127,) is admirably expressive.

θ. *flexuosa;* fronde filiformi intricata crassa, ramis elongatis valdè flexuosis apice sæpè involutis, ramulis elongatis secundis.

More flexuose than the last, with more elongated ramuli.

ι. *nigra;* fronde filiformi intricata, ramis flexuosis nudis hic illic ramulosis.

Slenderer and of a darker colour than the last, with fewer ramuli.

κ. *fasciculata;* fronde filiformi, ramis elongatis infernè nudis, supernè ramossissimis, ramulis fasiculatis.

λ. *cornuta;* fronde filiformi subcompressa densissime intricata pumila, ramis patentibus ramulosis, ramulis conicis spinæformibus.

Stem $\frac{1}{2}$—1 inch high, forming dense strata, much branched, compressed, about a quarter of a line in diameter; branches alternate, spreading; colour very dark.

In height and mode of growth it resembles ζ. but is far more robust and with compressed stems.

14. Chondrus *multipartitus*, *β. foliifer*, *Grev.* Sph. multipartitus, *Ag. Syst.* 216. Fucus æruginosus, *Turn. T.* 147. (admirable.) This variety appears to abound in the Mauritius.

15. Corallopsis?—I find in the collection a solitary imperfect specimen of a plant which may belong to this genus; but I dare not describe it as a new species, without some more certain data. The stem is slightly branched, irregularly dichotomous, ¼ inch in diameter at the thickest part, articulated at various distances, the articulations much contracted at their insertion and swollen upwards. Colour purplish. Substance coriaceo-membranaceous.

SIPHONEÆ.*

16. Caulerpa *clavifera*, *Ag. Syst.* 181. Fucus clavifer, *Turn. t.* 57.

17. Caulerpa *sedoides*, *Ag. Syst.* 182. F. sedoides, *Turn. t.* 172.

18. Codium adhærens. *Ag. Syst.* 178.

Specimens agreeing with Agardh's description of this supposed species, occur in the collection; but I really do not see how they are to be distinguished from the *young state* of *Codium tomentosum*, which, as is well known, is "plane and encrusting."

ULVACEÆ.

19. Ulva *latissima*, *Ag. Syst. p.* 188. U. Lactuca. *E. Bot. t.* 1551.

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* Dr. Greville, in his excellent arrangement of the Genera of the Algæ, has made *Caulerpa* the type of a distinct family, "*Caulerpeæ*;" but the structure and substance of this curious genus appear to me so truly analagous to those of *Codium* and *Vaucheria*, that I have ventured to refer it to the "*Siphoneæ*."—W. H. H.

20. Enteromorpha *compressa*, Link.—*Grev. Alg. Brit.* 180. *t.* 18. Solenia compressa, *Ag. Syst. p.* 186.

These plants appear to be as abundant in the Mauritius as they are with us, and to preserve all their peculiar characters, unaltered by climate.

ECTOCARPEÆ.

21. Sphacelaria *cupressina*, (*Harv. MS.*); stupa nulla, ramis subalternis simplicibus densissimè ramulosis, ramulis distichis abbreviatis divaricatis oppositis multifidis spinulosis, articulis brevissimis.

A very curious new species, with a good deal the habit of *Cladostephus*, but differing on a close inspection in the *distichous multifid* ramuli. *Stems* 1—2 inches high, irregularly branched; *branches* thick, simple, spreading, densely clothed with short, distichous, divaricating, mostly opposite, multifid *ramuli*, whose outer edge is often furnished with short conical spines; apices cloven. *Colour* a dark brown. *Articulations* not half so long as broad, obscure in the stem, 2-striated in the ramuli. The lower part of the stem is often furnished with irregularly branched, articulated fibres, bare of ramuli, but of a similar structure to the branches, and quite unlike the "stupa" found in other species of the genus.

22. Cladostephus *Lycopodium*, (*Ag. Spec. Alg. v.* 2. *p.* 14. Fucus Lycopodium, *Turn. T.* 199.); setis patentibus simplicibus flexuosis obtusis.

I have only seen a single specimen of this curious species, but Turner's admirable figure leaves no room for doubting the correctness of the reference. *Frond* vaguely branched; *primary thread* thick, densely covered with slender, flexuose, patent, horny, articulated *ramuli* of 2 lines or more in length, the *apices* of the *branches* (in conjunction with the ramuli) very obtuse, joints as long as broad, densely striated longitudinally. Substance very rigid and horny, much like that of a zoophyte. *Fruit*, on Mrs. Telfair's specimen, *dark brown granules*, imbedded in the distorted apices of the ramuli.

CONFERVEÆ.

23. Conferva *fascicularis?* (*Mert.—Ag. Syst. p.* 114); filis ramosissimis capillaceis, ramis remotis subsimplicibus infernè nudis, ramulis fastigiatis densissimè fasciculatis secundis, articulis ramorum diametro 4—6-plo longioribus.

I do not feel quite certain of the correctness of my reference to Mertens' *C. fascicularis*, which I only know through Agardh's short description and remark, "Conf. *glomeratæ* et *sericeæ* proxima, sed differt ramis remotis brevioribus;"—an observation which answers pretty well to my specimens. The filaments are 4—5 inches long, forming elegant tufts, much branched; branches nearly bare of ramuli in the lower part, where the axillæ are very distant; in the upper, set with fascicles, which are mostly crowded round the apices. Colour a pale green.

24. Conferva *composita*, (*Harv. MS.*); filis ramosissimis intricatis, ramis oppositis vel cruciatis patentibus bipinnatis, ramulis abbreviatis obtusis oppositis horizontalibus, articulis ramorum longissimis, ramulorum diametro duplo longioribus.

A very pretty species, which I cannot refer to any described by Agardh. It is well marked by its bipinnate branches and opposite ramuli. Stems short, interwoven, much entangled; branches opposite or ter-quaternate, spreading, branched more or less in a pinnate or bipinnate manner; the ramuli short, obtuse, patent. Articulations of the branches 10—12 times, of the ramuli twice, as long as broad. Colour a full green.

BOTANICAL INFORMATION.

ALGÆ DANMONIENSES.

We have, upon other occasions, borne testimony to the value of those botanical publications which are illustrated by specimens of the *Plants* themselves. The *Cryptogamiæ* are well suited for such a purpose, and hence, our country, as well as the continent, can boast of many such works: witness the admirable "*Plantæ Cryptogamæ Vogoso-Rhenanæ*," of Mougeot and Nestler, which has now reached to ten volumes in 4to., each containing 100 most beautifully preserved specimens* :—the "*Cryptogamische Gewasche, besonders der Fichtelgebirg* (Cryptogamic Plants, especially those of the Fichtelgebirg)," collected by Henry Christian Funck, of which 35 Fasciculi, each of 20 species, are now before us:—the truly beautiful "*Deutschlands Moose, ein Taschenherbarium zum Gebrauch auf botanischen Excursionen*, (German Mosses, or a Pocket Herbarium, to assist in Botanical excursions,)" by the same Author, &c.; all these are Continental Works; and in our country the "*Musci Britannici*" of the late ingenious Mr. Hobson; the "*Stirpes Cryptogamæ Oxonienses* of Mr. Baxter:" and the "*Musci Scotici*, and *Musci Americani*" of Mr. Drummond, &c. But, of all plants, none are so well adapted for being thus preserved in books as the *Algæ*, whether we consider the beauty of the species, or their closely adhering to paper, so as to resemble the most exquisite drawings: and hence the "*Algæ Britannicæ*" of Dr. Greville, and the "*Algæ Scoticæ*" of the late James Chalmers, have been greatly admired and eagerly sought after. The rocky coasts, however, of the extreme south of England produce varieties of this beautiful family quite unknown on the more northern shores, and we are most happy to be able to announce that these are about to be made known, under the title of "*Algæ Danmonienses, or dried Specimens of Marine Plants, principally collected in Devonshire; carefully named according to Dr. Hooker's British Flora; prepared and sold by Mary Wyatt, Dealer in Shells, Torquay: large 4to.*" Two *Fasciculi*, or volumes as they are called, have already appeared, each containing 50 species, remarkable for the rarity of many kinds, the general fineness of the specimens and the excellent preservation of the whole. What adds greatly to the value is, that the species are determined by Mrs. Griffiths, to whose suggestion it is, if we are not mistaken, that we are indebted for this useful addition to our botanical libraries. The first volume contains, among others, *Cystoseira ericoides, Sphærococcus rhizodes, Asperococcus compressus, Punctaria latifolia, Dictyota dichotoma, Padina pavonia, Haliseris polypodioides, Nitophyllum ocellatum, N. ulvoideum, Rhodomenia jubata, R. reniformis, Laurencia tenuissima, Chylocladia clavellosa, Gigartina compressa, G. acicularis, G. Teedii, G. Griffithsiæ, Griffithsia multifida, Calithamnion gracillimum, Conferva centralis, Mesogloia Griffithsiana, M. virescens*, &c.—Vol. ii. has *Cystoseira fœniculacea, C. fibrosa, Desmarestia ligulata, Asperococcus? pusillus, A. Turneri, Delesseria ruscifolia, Nitophyllum Gmelini, Rhodomenia bifida, Microcladia glandulosa, Bonnemaisonia asparagoides, Chylocladia parvula, Halymenia furcellata, Polysiphonia Brodiæi, P. elongella, Spyridia filamentosa, Calithamnion versicolor, C. spongiosum, Conferva gracilis*, (*n. sp.*), *Mesogloia Hudsoni, &c.* We hear, with pleasure, that the ingenious author has met with ample encouragement from the public, so that she finds it difficult to prepare sets fast enough to meet the demand. The number of copies sold, will, we trust, make ample amends for the low price (considering the labour, and time, and skill required in the preparation) at which the work is offered; £1 the volume.

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* The tenth volume has not, indeed, we believe, been received in this country, and the excellent Dr. Nestler having been removed by death, it has fallen to the lot of his surviving friend Dr. Mougeot to prepare this volume, which, he tells us, "contains many Mosses of considerable interest, for example, *Phascum pachycarpon* and *globiferum*, *Weissia tristicha*, *Mnium cinclidiodes*, Hueb. of the North of Germany, which grows in the marshes around Metz. We have discovered abundantly in Alsace the *Didymodon nervosum*, which, together with *Weissia cæspitosa*, Bruch, finds a place in our present *Centuria*."—*Moug. in Litt.*

FLORA ALTAICA, ET ICONES PLANTARUM NOVARUM VEL

IMPERFECTE COGNITARUM FLORAM ROSSICAM, IMPRIMIS ALTAICAM, ILLUSTRANTES.

Professor von Ledebour, whose interesting Travels we noticed at some length in the first series of this work, is labouring most assiduously on the "*Flora Altaica*," and "*Icones Plantarum*;" on the former, which has now extended to 3 volumes, (and to the end of the class *Diadelphia*,) with the assistance of Dr. Ch. Ant. Meyer and Dr. Al. von Bunge. Here the plants, of which a considerable portion is new, are described with great care and minuteness; while in the "Icones," of which the third volume or "*Centuria*," is now before us, contains coloured representations of the new or less known species, executed with a beauty and accuracy which would do honour to any age or country. We can speak with the more confidence to their accuracy, because the able author has munificently shared with us of his abundant treasures. The present fasciculus contains *Leguminosæ*. Of the Genus *Oxytropis*, of which 20 were discovered in the Altai, 6 are here figured, and of *Astragalus*, of which 48 rewarded the researches of Professor Ledebour and his companion, 14 are represented.

Notwithstanding all that has been said respecting the backward state of literature and science in the Austrian Government, few countries possess more extensive Botanic Gardens, and no country can vie with it in the splendour of its Botanical Publications. At no period, antecedent or subsequent, have so many magnificent publications proceeded from one individual, as, during the latter part of the last century, from the celebrated Jacquin of Vienna. They were succeeded by the "*Gramina Austriaca*," and "*Icones Salicum*," of Dr. Host; and these again, in point of execution of the plates and choice of the subjects, by the almost unrivalled "*Plantarum Brasiliæ Icones et Descriptiones*," of Dr. Pohl. Nothing can exceed the beauty of the *Francisia*, (so named in honour of Francis I. of Austria, and of which one species, at least, is cultivated in England,) the *Melastomaceæ*, the *Vellosiæ*, (of which remarkable genus 15 species are enumerated,) the *Augustæ* (among the *Rubiaceæ*, so called in compliment to Caroline Augusta, the reigning empress of Austria,) the *Ferdinandusæ*, (a Bignoniaceous genus, honoured by the name of the hereditary prince of Austria,) the *Vochysiæ*, the *Lobeliæ*, and lastly, what have just reached us, in the concluding fasciculus of the work, the *Lafoensia* and the *Coutourea pubescens*. Such publications as we have now alluded to, fostered, as they are, by imperial patronage, cannot fail to give a stimulus to the science in the Austrian dominions.

The "*Meletemata Botanica*," and the "*Prodromus Floræ Norfolkicæ*," have just been obligingly communicated to us by their authors from Vienna. The former is in folio, and the first fasciculus, as is well expressed by the name,* contains a most complete analysis and very full descriptions of new species, together with remarks upon other genera belonging to the Orders under consideration, by Henry Schott and Stephan Endlicher. It is dedicated to the excellent Wallich. The two first genera, *Lophophytum* and *Scybalium*, belong to the *Balanophoreæ* of Richard: and here the author has taken the opportunity of offering a new arrangement of that and other allied Orders: which he includes under the class of RHIZANTHEÆ (*Pseudocotyledoneæ sexuales, in aliarum stirpium radicibus parasiticæ.*)—ORD. I. BALANOPHOREÆ. 1. Lophophytum, *Schott* and *Endl.* 2. Sarcophyte, *Sparrm.* 3. Cynomorium. 4. Helosis. 5. Scybalium, *Schott.* 6. Langsdorffia. 7. Balanophora.—ORD. II. CYTINEÆ. 8. Cytinus, *L.* 9. Hypolepis, *Pers.* 10. Aphyteia, *L.* (Hydnora, *Th.*) 11. Apodanthes, *Poit.*—ORD. III. RAFFLESIACEÆ. 12. Brugmansia, *Blum.* 13. Rafflesia, *Br.*

From the *Balanophoreæ*, Schott is naturally led on to offer a new arrangement of *Aroideæ;* thus—AROIDEÆ. (*Monocotyledones. Flores ex axi elongato continui, absque perigonio manifesto. Folia.*)—ORD. I. CYCLANTHEÆ. 1. Phytelephas, *R.* and *P.* 2. Carludovica, *R.* and *P.* 3. Cyclanthus, *Poir.* —ORD. II. PANDANEÆ. 4. Pandanus, *L.* 5. Freycinetia. —ORD. III. ARACEÆ. *Schott.* Subord. A. Androgynantheæ. *Schott. Flores nudi.*—TRIBE I. AMBROSINEÆ. 6. Cryptocoryne, *Fisch.* 7. Ambrosinia, *Micheli.*—TRIBE II. DRACUNCULINÆ. 8. Arisarum, *Tourn.* 9. Arisæma, *Mart.* 10. Biarum, *Schott.* 11. Arum, *L.* 12. Typhonium, *Schott.* (Arum trilobatum, *L.*, &c.) 13. Sauromatum, *Schott.* (Arum guttatum, *Wall.* &c.) 14. Dracunculus, *Tourn.* 15. Candarum, *Reich.* (Arum campanulatum, *Hook.* &c.) 16. Pythonium, *Schott.* (Arum bulbiferum, *Roxb.* and Thomsonia Nepalensis, *Wall*).—TRIBE III. CALADIEÆ, 17. Remusatia, *Schott.* (Caladium viviparum, *Nees.*) 18. Colocasia, *Ray.* 19. Caladium, *Vent.* 20. Peltandra, *Rafin.* (Caladium Virginicum, *Hook.*) 21. Xanthosoma, *Schott.* (Caladium sagittæfolium, *Vent.* &c.) 22. Acontias, *Schott.* (Caladium helleborifolium, *Vent.* &c.) 23. Syngonium, *Schott.* (Caladium. auritum, *Vent.*) 24. Denhamia, *Schott.* (Culcasia scandens, *Palis.*) 25. Philodendron, *Schott.* (Caladium cannefolium). —TRIBE IV. ANAPOREÆ. 26. Spathicarpa, *Hook.* 27. Dreffenbachia, *Schott.* (Caladium Seguinum, *Vent.*) 28. Homalomena, *Schott.* (Calla aromatica.) 29. Aglaonema, *Schott.* (Arum integrifolium, *Link.*) 30. Richardia, *Kunth.*—Subord. B. Hermaphroditantheæ, *Schott. Stamina perfecta, cum ovariis in flosculos hermaphroditos consociata.*—TRIBE I. CALLACEÆ. 31. Calla, *L.* 32. Monstera. (Dracontium pertusum, *Mill.*) 33. Scindapsus, *Schott.* (Pothos glaucus, *Wall,* &c.)—TRIBE II. ORONTIACEÆ. 34. Pothos, *L.* 35. Lasia, *Lour.* 36. Anthurium, *Schott.* (Pothos crassinervium, &c.) 37. Spathiphyllum, *Schott.* (Dracontium lanceæfolium, *Jacq.*) 38. Dracontium, *L.* 39. Symplocarpus, *Salisb.* 40. Orontium, *L.*—ORD. IV. ACOROIDEÆ. *Schott.* 41. Acorus, *L.* 42. Gymnostachys, *Br.*

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* Μελετημα, exercitatio, opus elaboratum cura.

The illustrations of the genus *Mayaca* occupy an entire plate, and the authors are of opinion that it will constitute a distinct Order, between *Commelinaceæ* and *Xyrideæ*. The genera *Ungeria* and *Methorium*, of the Order *Sterculiaceæ*, afford an opportunity for a new arrangement of the genera belonging to it, (including *Bombaceæ*) and altogether embracing 41 Genera.

The second work alluded to above, *Prodromus Floræ Norfolkicæ*, is a small 8vo. and from the pen of Mr. Endlicher, aided by the truly masterly drawings of Mr. Ferdinand Bauer, by whom the collection was made, in company with Mr. Brown, during the years 1804–5. Our limited space will only allow us to observe that the Flora comprises 162 species, of which the *Lichenes* contain 4 species, *Musci Frondosi*, 11. *Hepaticæ*, 4. *Lycopodiaceæ*, 1. *Marattiaceæ*, 1. *Polypodiaceæ*, 28. *Cyatheaceæ*, 2. *Hymenophylleæ*, 2. *Gramineæ*, 8. *Cyperaceæ*, 4. *Pandaneæ*, 1. *Palmaæ*, 1. *Asphodeleæ*, 4. *Smilaceæ*, 1. *Orchideæ*, 5. *Musaceæ*, 1. *Abietinaæ*, 1. *Piperaceæ*, 4. *Urticaceæ*, 3. *Moreæ*, 1. *Celtideæ*, 1. *Polygoneæ*, 1. *Plumbagineæ*, 1. *Nyctagineæ*, 1. *Amarantaceæ*, 2. *Santalaceæ*, 1. *Thymeleæ*, 2. *Primulaceæ*, 1. *Myrsineæ*, 1. *Sapotaceæ*, 1. *Lobeliaceæ*, 1. *Synanthereæ*, 5. *Convolvulaceæ*, 6. *Solanaceæ*, 1. *Myoporineæ*, 1. *Jasmineæ*, 1. *Oleineæ*, 1. *Apocyneæ*, 2. *Asclepiadeæ*, 1. *Rubiaceæ*, 2. *Loranthaceæ*, 1. *Araliaceæ*, 2. *Capparideæ*, 1. *Passifloreæ*, 2. *Cucurbitaceæ*, 3. *Violarieæ*, 1. *Oxalideæ*, 1. *Ficoideæ*, 2. *Malvaceæ*, 6. *Sterculiaceæ*, 1. *Pittosporeæ*, 1. *Meliaceæ*, 1. *Rhamneæ*, 1. *Celastrineæ*, 1. *Euphorbiaceæ*, 4. *Rutaceæ*, 3. *Leguminosæ*, 4.

Professor Lindley, notwithstanding his numerous duties, at the Horticultural Society, and in the London University, has, in addition to his valuable works introductory to the study of Botany, and the Natural Orders, given to the world his "*Nixus Plantarum*," and the 3d Part of his "*Genera and Species of Orchideous Plants*," containing the "*Vandeæ*," which he divides into 96 Genera.

Mr. Bentham is proceeding with all the speed that is consistent with accurate investigation, with his admirable "*Labiatarum Generæ et Species*," of which 3 Parts have now appeared. A fourth is in a state of forwardness, and will comprise the *Satureineæ* and the *Melissineæ*.

The able and laborious* Professor Nees von Esenbeck has recently sent us the first volume of his "*Naturgeschichte der Europäischen Lebermoose*," or History of the European *Hepaticeæ*, with reference especially to those of Silesia and to the localities of the Riesengebirge. The author gives a very full account of the structure of the Order, and divides the species into the following Tribes.

TRIBE I. JUNGERMANNIEÆ. TRIBE II. CEPHALOTHECEÆ.

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* And no less laborious than useful; as it may truly be said of him, as of the great Sir Godfrey Kneller, "Nihil tetigit quod non ornavit." We have lately had from his pen the volume of *Grasses* of Martius; another on the *Astereæ* (*Genera et Species Asterearum*, Wrattislaw, 1832,) and he has undertaken the task of determining and describing the species of many difficult Genera and Orders in Dr. Wallich's and Dr. Wight's collections, and those of other eminent Botanists: to these may be added his republication of the whole of Mr. Brown's Botanical publications, with copious notes, his many valuable Memoirs in the Transactions of learned Societies, and particularly in the *Nov. Act. Acad. Imp. Naturæ Curiosorum*. Many of these are on Cryptogamic subjects; and not the least interesting is the account of an esculent *Lichen* (of which he has communicated specimens to us,) the *Lecanora esculenta*, found by Professor Ledebour in the Kirgise Steppes, and in general in Middle Asia, frequently on a barren soil or in clefts of rocks, whence it is often washed down after sudden and violent showers of rain so as to be collected in considerable quantity and easily gathered for food. The same species was found by M. Parrot, who procured it in his journey to Ararat, where it is eaten by the natives; and in some districts of Persia, in 1828, it covered the ground to a depth of five or six inches, in so short a period of time, that, according to the opinion of the people, it had been rained down from heaven. May not this be the Manna with which the Israelites were miraculously fed in the wilderness?

(or MARCHANTIEÆ). TRIBE III. TARGIONEÆ. TRIBE IV. ANTHOCEROTEÆ. TRIBE V. RICCIEÆ.

The table of the Genera of *Jungermannieæ* is alone given in this volume, and is as follows.

1. JUNGERMANNIA. (Jungermanniæ pars, *Auct.*) 2. Ptilidium, (J. ciliaris.) 3. Mastigophora, *Nees.* 4. Herpetium, *Nees.* (J. trilobata and its affinities). 5. Jubula, (J. Tamarisci and dilatata). 6. Radula, (J. complanata). 7. Lejeunia, (J. platyphylla, &c.;—J. serpyllifolia, &c. J. Mackaii). 8. Diplomitrion (J. Lyellii, and Hibernica). 9. Cordæa, *Nees.* 10. Blasia. 11. Sarcoscyphus, (J. emarginata, &c.) 12. Saccogyna, (J. viticulosa). 13. Geocalyx. (J. graveolens). 14. Calypogeia, (J. Trichomanis). 15. Tricholea, (J. tomentella). 16. Schisma. 17. Gymnomitrium, (J. concinnata, juniperina, &c.) 18. Haplomitrium. 19. Pellia, (J. epiphylla). 20. Metzgeria. 21. Echinomitrium, (J. furcata). 22. Codonia.

The 3d part of the 3d volume of Martius "*Nova Genera et Species Plantarum Brasiliæ*," (the conclusion of the work) has recently reached us. Of the 28 plates, a large proportion is occupied by *Melastomaceæ ;* 3 are devoted to an admirable illustration of the *Balanophoreæ. Tab.* 291, *Myrrhinium atropurpureum*, Schott and Martius, is a very remarkable plant of the *Memecyleæ*, to which the *Tetrastemon** *loranthoides*, Hook. and Arn. in *Bot. Misc. v.* iii. *p.* 318, should undoubtedly be referred. Martius gives it as a native of the province of St. Sebastian; Mr. Baird found it at Santa Cruz in the missions of Brazil.

The progress of Botany is greatly indebted to the numerous Collectors of Plants who are now scattered over various parts of the globe. The "*Unio Itineraria*," an Association which we have warmly advocated in former pages of this Journal, is extending its circle of research and rendering most essential services to the cause of our favourite science. The information respecting it, communicated in a circular, dated Esslingen, May, 1832, is interesting, and will probably prove new to many of our readers, relating, as it does, to the voyage of M. Schimper, who was sent to Algiers by the Würtemberg Unio Itineraria.

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* *Feliciansa rubrifolia*, St. Hil. *Fl. Bras. Merid. v.* i. *p.* 375. *t.* 157.

"It was on the 8th of December, 1831, when M. Schimper, commissioned by the *Unio Itineraria* to collect botanical specimens and other subjects of Natural History, arrived at Algiers, after a very boisterous passage from Marseilles. He quickly ascertained that the situation is not so unfavourable for a Collector as the Newspaper statements might lead one to suppose, and that the annoyances offered by the Bedouin Arabs are chiefly to be apprehended in the immediate environs of the town. The detached outposts of the French are situated at about four or five hours' distance from Algiers, and within these limits the traveller can make excursions without much danger. In the environs of the town, the hills are low, and intersected with small rivulets that are very favourable to vegetation. The sea-coast is partly rocky and partly sandy, rich in species of *Fuci* and marine insects or *Molluscæ*. In the distance, fifteen to twenty hours' journey inland, are large mountains, covered with snow; where, in the middle of December, the thermometer indicated from 20° to 23° of Reaumur in the sun, and from 10° to 17° in the shade. Spring seemed to be at hand, for many plants were in blossom. It was with the utmost difficulty that M. Schimper obtained a lodging, the town being excessively crowded, and the houses, in general, very badly constructed. For the first few months he was obliged to be satisfied with a room without windows, lighted only by the door, which caused great inconvenience in drying his plants, while the long-continued and violent rains during the month of February exposed the whole collection to the greatest danger. The ill-built apartment admitted the rain in all directions, and it was only by great labour and suspending the packages and bundles from the ceiling that M. Schimper was able to protect them from the weather. We will let the traveller speak for himself on these difficulties, and on the better habitation where he is now settled, for his own words, in a letter of the 8th of April, are interesting, as affording the subscribers to the Unio Itineraria every assurance that the best care is taken to preserve the treasures which M. Schimper has already accumulated. In his letter, he says, "The construction of the houses here is very bad, for the flat roof not allowing the rain to flow off, it accumulates, penetrates through, and frequently descends like a stream, into the apartments below: the walls become also saturated with damp which it takes a long time to dissipate, and which is probably the main cause of the dysenteries that always prevail on the appearance of warmer weather. During the late storms of wind and rain, many houses have been blown down, and their inhabitants have perished in the ruins; and two vessels were wrecked on the coast; the sea running to a height twice as great as that of the houses on the Marine. What pains it cost me to obtain a more secure lodging, and the time that was wasted in consequence, I shall pass over in silence, as I am now comfortably settled in a convenient house, containing 2 rooms, a bed-closet, an apartment for zoological subjects, an enclosed piece of ground and a terrace well adapted for drying my plants, and which commands a beautiful prospect upon the sea, to the east and towards the Great and Little Mount Atlas. For this truly valuable acquisition, which I have procured at a comparatively cheap rate, I may thank the few words of Arabic that I picked up, and which I now understand about as well as I did the French language when I first visited France, so that in any case of difficulty, I am able to use it, and have made some progress in reading and writing it. I have hung the walls of one of my rooms with a matting made of the stalks of *Juncus*, for the purpose of keeping off the damp, and the dried plants lie in covered boxes, piled one above another, and thus secure from injury."

With regard to what M. Schimper had collected at that time, he gives the following account:—"Of phænogamic plants there are about 350 species gathered and dried; of the most interesting kinds, I have got 100 duplicates, and a smaller number of the rest; some only in single specimens, and of others 6 or 7, or 12, 30 and 50, according as they appeared doubtful or peculiar in their appearance. Of *Cerinthe major*, which grows to the height of a man; of *Ranunculus Ficaria*, whose unusual size renders it scarcely recognizable; and of *Ricinus communis?* (*hybridus?*) which here attains the stature of a tree, you will receive many duplicates. There are about 60 species of *Algæ*, some kinds numerous, and of others but a single individual. To these may be added 50 or 60 *Mosses*, *Lichens* and other *Cryptogamia*, which I gathered as they happened to occur, and whenever I had time and paper for drying them ready. By the end of May or beginning of June, I think I may expect to have from 25,000, to 30,000, specimens of important Phanerogamic plants, in case no unexpected obstacles arise, and that illness or other misfortunes do not befall me."

Among the plants collected by M. Schimper, he particularizes the following: *Cynoglossum clandestinum*, Desf.—*Raphanus*—?; *Spartium unifolium*, Desf.—*Genista tricuspidata*, Desf.—*Osyris?* (non *alba*);—*Centaurea pullata*, L.—*Elichrysum Fontanesii*, Camb.—*Silene imbricata*, Desf. (with three other undescribed species of this genus),—*Lotus*, (two scarce and undetermined species),—*Senecio humilis*, Desf.—*Thymus inodorus*, Desf.—*Aristolochia altissima*, Desf. (with one other related to it);—*Viola frutescens*, Roth.—*Sisymbrium amplexicaule*, Desf.—*Euphorbia* (2 undetermined species, probably very good ones);—*Physalis somnifera*, L.—*Ruscus androgynus*, L.—*Achyranthes aspera?*—*Ranunculus flabellatus*, Desf. (with another related to it), and *R. trilobus*, Desf.—*Onosma*—? a beautiful plant;—4 species of *Allium*—*Mælope malacoides*, L.—*Lepidium glastifolium*, Desf.—*Astragalus**

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* A plant which has, of late, been extensively cultivated on the Continent, and even in this country, and used as a substitute for Coffee.

Boeticus ? (and a large yellow-flowered stalkless species of this genus, probably new);—*Scrophularia auriculata*, L. and *S. mellifera*, Ait.—*Hedysarum spinosissimum*, L.—*Orobanche fœtida*, Poir.—*Arenaria*—?—*Orchis longicornu*, Poir. with 4 other species, and *Ophrys insectifera*, β. *rosea* of Desf., together with 4 undetermined individuals of the same genus.

This extract from M. Schimper's letter, which he wrote in haste, only serves to give the members of the *Unio Itineraria* an idea of what they may expect from his labours; and as he has since extended his investigations beyond the immediate vicinity of Algiers, we may hope for many additional and new species of plants. The following passage will show that he possesses both courage and caution, and is likely to avail himself of every facility which the present position of the States of Algiers will afford. "Already I have made several excursions by myself into the plains of Matidja, where I have mingled with the natives; eating and drinking with them, and being even permitted to see their wives. The meal consisted at one time of milk, and at another of oil, served in a dish on the ground, round which we sat, and in which I dipped my bread and ate it, like one of themselves. Some of the Arab women joined us, while others were engaged in milking the cows, and all stared at me with an air of extreme curiosity. They were clad in large white cloaks, tied round the waist with a sash, and confined on the left side of the bosom with a large silver pin, the top of which is of the same shape and size as a shepherd's hook. Their heads were uncovered and their black hair hung down in disorder; the younger ones were handsome and had sprightly eyes. When, on another occasion, I happened to approach another tribe, the women and children raised a violent outcry, and ran all together; and when I drew still nearer, they concealed themselves under their linen tents, while the young men surrounded me with great curiosity. With the latter I exchanged the customary salutation of kissing hands, which is here considered a token of esteem. They gazed with staring admiration on my tin vasculum, which, together with my hand-spade, they offered to purchase; but I considered it advisable to quit this party soon, as instruments of any kind are apt to induce these savages to commit assassination." M. Schimper mentions that during these excursions he always carries arms in self-defence.

From this it appears, that Algiers, even under its present circumstances, offers a rich harvest to the collector: thus the excursion to the Balearic Isles, which was to have been made if Algiers proved unfavourable, will not take place; but M. Schimper, when he has completed his collections at Algiers, will proceed to Tunis, which he considers likely to be more productive than the Balearic Islands. This, indeed, requires new funds from the Union, and we therefore, venture to request that the members and subscribers will send their contributions for the year 1833, as this undertaking will include the present autumn (of 1832,) and the spring of 1833. The passage from Algiers to Tunis occupies but 10 days, and the prospects there are represented as very favourable, since travelling into the interior, and exploring the mountains, can be effected with perfect security. M. Schimper expresses himself on this subject as follows. "In Tunis you can travel where you please; this I ascertained from the French Agent at Marseilles, who had long resided there as Consul; also from the Adjutant of the Commander-in-Chief here, who had been there; and lastly, from a traveller who has but recently arrived from that country." The Flora of Tunis has a natural connexion with that of Algiers, and will prove a desirable continuation of it: and though many plants may be common to both these countries, yet M. Schimper will only collect such as were not found, or had been gathered only in very small quantities, at Algiers, which will render the harvest still more interesting. Drs. Hochstetter and Steudel, therefore, request all friends of Botany to support the accomplishment of this undertaking by their subscriptions, a whole share at £3, and half a share at £1 : 10. Subscribers may still participate in the Algiers collection, if, without delay, they remit their subscriptions, either by a

Bill of Exchange, or in cash payments, since the expenses of that journey are not yet covered, and some shares are still untaken. M. Schimper also collects objects of zoology, upon the notice of which our limits forbid us to enter; he has given some interesting observations on this point, and subscriptions for it may also be received.

The collections distributed to the Subscribers in the winter of 1833–4, consist of plants from Algiers, gathered by Schimper; from the Caucasus; from N. America, chiefly around Pittsburg, gathered by Voltz, and a few from Cette in the South of France. The Society lament that the Algerine collection is so limited; but they have been disappointed of receiving so many as were expected, chiefly from unfortunate and unforeseen circumstances attending the collector. We are informed that M. Schimper was preparing himself for a journey to Tunis, extending to the interior and mountainous districts, in which he expects to be assisted by the Grand Duke of Baden. He will probably be accompanied by a physician and botanist of Würtemberg, whose collection it is likely may also become the property of the "Unio."

It appears by the same circular that the Society is likewise in treaty for Mr. Ecklon's collection of Cape Plants. This indefatigable Botanist, as has been already noticed in this work, has devoted many years to the investigation of the botany of Southern Africa, in conjunction with his friend Mr. Zeyher, and has recently returned to Europe with his extensive collections, many of them made in the previously unexplored regions of the interior. Zeyher visited the districts of Worcester and Clan-William, remained some time at the Elephant River, so rich in its vegetable forms, proceeded to the Zederberge, where he found many beautiful *Proteaceæ* and *Ericas*, thence to the Kamiesberg in Namaqualand, where he gathered *Codon Royeni*, and *Aphyteja Hydnora*, and the wilds inhabited by Boschesmen, as far as the banks of the Orange or Gariep-river. Ecklon took an opposite course, proceeding by water to Algoa Bay, in order to visit the districts of Nitenhage, Albania and part of Cafferland, where he found many beautiful plants, particularly on the Winterhocksberg. This may be considered the limit, properly speaking, of the Cape Flora; on the other side a new vegetation prevailing, which may be called the Cafferland Flora. Again, in the woods of Krakakamma and Adow, other forms appear, and others still upon the Choumiberg in Cafferland. Among the most remarkable plants in these countries may be reckoned the *Icthyosma Wehdemanni*, the new *Testudinaria sylvatica* and several species of *Zamia* before unknown. On his return to the Cape, and in company with Zeyher, he proceeded to and ascended the Tulbagh mountain, (6,000 feet in elevation,) where were found peculiar alpine forms of the Cape genera, especially of the *Proteaceæ* and *Orchideæ*. Then commenced their great and most important journey into the interior, which occupied them two years. From Cape Town they took the route of the Palun river, Caledon, Cape Agulhas, and Zwellendam, through the Kochman's Kloof to the Karro, remained for a time at Gaurit's river, to collect the plants peculiar to the Karro district, and visited the chain of Zwartzberg in the district of Graaf-Reynet: thence to Houtniqualand and the beautiful woods of the Knysna,* George's and Plettenberg's Bay, whence they proceeded through Lange Kloof to Nitenhage and Algoa Bay, in order to ship off their hitherto collected stores to Cape Town. This accomplished, our travellers journeyed over the most interesting districts of Albania and Somerset, and onward by the Great Fish river, to Konab, Cat river and to the present Amakosee or Cafferland. In the mountains of this country they had the gratification of finding several European genera, viz., *Geum*, *Agrimonia*, *Pulsatilla*, &c., which they had never met with before in Southern Africa. Thence they took the route of the Makasani river, to the newly established villages of Balfour and Philipstown at the sources of the Kaff river, and crossed with great difficulty the steep chain of mountains that extends laterally from the Sturmberg to the sea, and forms the present boundary of the colony. Beyond this our enthusiastic naturalists proceeded to the source of the Key-river, and the country of the Amatymben, or, as it is called, Tambukis. There they discovered a species of *Bambusa*, a remarkable new *Zamia*, which they called, after their friend, *Z. Lehmanniana*, besides several new species of *Acacia*, *Erythrina* and beautiful *Orchideæ*. Here again their collections had attained such an unwieldy bulk, that it was agreed Mr. Ecklon should convey them to the Cape and Europe, which he happily accomplished, arriving in Hamburgh with 38 chests of plants.

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* Where it will be recollected Mr. Bowie found the beautiful *Didymocarpus Rhexii* (*Hooker's Exotic Flora, t.* 227), now one of the greatest ornaments of our stoves.

The number of species is estimated to amount to between 7 and 8000, of which however many are uniques, or obtained in small numbers, and such are very properly reserved for the travellers' own collections. The rest are offered for sale, in Herbaria, varying in price,[*] according to the number and value of the species. The specimens will be accompanied by Nos. referring to an "Enumeratio Plantarum Africæ australis" which will soon be ready for publication (by Messrs. Perthes and Besser of Hamburgh), and which is to be considered as the *Prodromus* of a complete *Flora of Southern Africa*. We heartily congratulate the Botanists of Europe that they have at length the prospect of becoming acquainted, through this channel, with the vege-

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[*] This is stated in a circular of Mr. Ecklon, dated Hamburgh Botanic Garden 1834, as follows :—

1.	Herbarium of about	3000	species at L2 : 10.—for each 100.
2.	. . . .	2000	. 2.
3.	. . . .	1500	. 1 : 15.
4.	. . . .	1000	. 1 : 10.
5.	. . . .	500	. 1 : 5.

tation of a country of the greatest interest; but which, notwithstanding it has been so often visited by men of science, was but imperfectly investigated, and still more imperfectly described.

Many Botanists and collectors, we are happy to say, are at this time engaged in making known the vegetable productions of the vast continent of America. In the United States several accomplished botanists are prosecuting their researches; some of these are resident on the west side of the Alleghany mountains; while the district around Kentucky is already successfully explored by Dr. Short and Mr. Townsend. Dr. Asa Grey of N. York, is, under the auspices and with the able assistance of Dr. Torrey, preparing for publication fasciculi of specimens of the difficult genera of N. American plants; a fasciculus of 50 Grasses was announced to appear during the present winter, and we are in daily expectation of obtaining it. Such a publication cannot fail to be highly useful and well received. The Grasses, particularly, need illustration, and no one is better qualified to determine them than Dr. Torrey, with whom they have long been a favourite object of study. The labours of Mr. Drummond in Louisiana, have already been detailed in the present and former series of this work, and what he has done and is doing in Texas will be hereafter mentioned. The British settlements in North America, especially on the east side of the Rocky Mountains, have been so well explored by the naturalists of Sir John Franklin's expeditions, as we apprehend to leave comparatively little for future investigation. On the west side of that vast chain, the Andes of N. America, the indefatigable Douglas is still prosecuting his researches, and, while engaged in preparing the present notice for the press, the writer has the pleasure of receiving letters from him, dated from the interior of the Columbia, N. lat. 48., W. lon. 119. 23. His object appeared to be to visit the country to the north of the Columbia, and near to the southern base of the Rocky Mountains.

Previous to his setting out on this expedition, Mr. Douglas had spent many months in California, and transmitted to the Horticultural Society an inestimable collection of dried specimens and roots and seeds, of which the larger portion was obtained near Monterrey. In an opposite direction also, namely on the north side of the Columbia, keeping near the coast, he had visited New Georgia. The district of the Columbia too and other of the vast possessions of the Hudson's Bay Company, may be expected to be more thoroughly known, from the liberality of the Company just mentioned, who have appointed two medical gentlemen, Dr. Meredith Gairdner and Mr. Tolmie, well versed in Natural History, to reside in that country. They embarked in August, 1832, and the news of their arrival is anxiously expected by their friends.* In the south-west of N. America, again, Dr. Coulter, a most indefatigable and accomplished Botanist, has spent many months. He joined Mr. Douglas at Monterrey, and afterwards proceeded south to the Rio Colorado, at the head of the Gulf of California, in lat. 34° N.; and when our informant left California, Dr. Coulter was preparing to ascend that river. If he should proceed to Santa Fè, in New Mexico, as was probable, it would not surprise us were he to meet Mr. Drummond there.

In South America, William Jameson, Esq., Professor of Chemistry and Natural History in the University of Quito, and Colonel Hall of the same place, have collected many most interesting and novel plants, especially among the minute Ferns and other Alpine genera, upon the more elevated mountains of the Cordillera of Colombia.

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* While this sheet is in the press we have the pleasure of being able to say, that by letters, now received (March, 1834) from Dr. Gairdner, we learn that they had a safe but long passage of eight months' duration, to Fort Vancouver on the Columbia. Mr. Tolmie was stationed at Nusqually House, a new station of the Hudson's Bay Company, at the head of Puget Sound, a spot that has scarcely been visited by any Botanist since the voyage of Captain Vancouver. Mr. Douglas had just returned from a four months' tour into New Caledonia, but he had lost his collections by having made shipwreck in Fraser's River.

In Peru, Mr. Mathews has collected upwards of 1200 species, of which he has sent many sets to England. This most deserving Botanist and collector is now devoting his whole time to the service of the public, and offering his excellent specimens at the very moderate rate of £2 for 100 species. His head-quarters are at Lima, but he is continually making extensive excursions in various directions, and especially in the Cordillera. In the beginning of last year (1833), he returned from a journey by way of Pasco to Huanuco, Tarma, Xuaja and Huançayo; thence he crossed eastwardly to a Quebrada called Pariahuanca, which conducts to the Apurimac River. On the East side of the Cordillera, he observed the *Calceolariæ*, which are so common on the west side, entirely to disappear, (with the exception of one species,) and to be replaced in the temperate regions, by the genera *Andromeda* and *Arbutus*, and lower down by terrestrial and parasitical *Orchideæ*. In April of last year, he visited the neighbourhood of Pangoa, east of the town of Jauja, where he found the *Erythroxylon Coca* extensively cultivated. Of this plant, "Coca" of the Indians, according to Joseph de Jussieu, a quantity equal in value to 7—800,000 piastres is distributed among all the mines of the country. It is the leaves that are employed; and the Indians cannot support the fatigue of working the mines without continually chewing the *Coca*, mixed with the leaves of the *Quinoa, (Chenopodium Quinoa)* which is also cultivated in the country. An extension of his journey which Mr. Mathews had contemplated, was prevented by a revolution at Ayacucho: but 200 species rewarded his labour. By his last letter, dated Lima, Aug. 20. 1833, he was about to set out for the interior of Huanuco, about Pillao, where Ruiz and Pavon spent much time, and gathered many of their rarest plants. Indeed, Mr. Mathews' collections contain many of the species of those celebrated travellers; and it is to be hoped that he will meet with such encouragement from the Botanists of this country, as may enable him to prosecute his researches upon a more extended scale. Mr. Mathews has excellent opportunities of determining the plants of Ruiz and Pavon, partly by a knowledge of their localities, and partly by their works which he possesses, as well as by many of their unpublished drawings and their original named specimens, which he has been so fortunate as to meet with in the country. Every one of his specimens is accompanied by a label with the exact station and the name as far as he is able to determine it.

In Chili Mr. Bridges is most industriously employed as a Collector, and our last communication from him consists of a valuable package of plants from Valdivia, a highly interesting and very little known province in the south of Chili, inhabited by the Araucanians, the finest and most independent race of Indians in S. America. He visited the country under very favourable circumstances, accompanying a party with the Commissary of the Indians, as far as the Cordillera of the Valdivia, in order to stop one of the passes to the Pampas of Buenos Ayres, and thus to prevent the Pehuatche tribe from intruding on the western side of the Andes. Before coming to the mountains, they had to pass a table-land, constituted by immense plains, similar to those of Santiago de Chili, and apparently such as extend along the whole length of Chili and Peru, and affording many excellent plants. Approaching nearer to the Cordillera, they arrived at the lake of Runco, the beauty of which, Mr. Bridges says, it is impossible to describe. Its computed length is 15 or 20 leagues, and it is of nearly the same breadth; including many islands, the largest of which is inhabited by several families of Indians. The margins of the lake too are peopled, though thinly, and the houses are always situated in a grove of apple-trees. The produce of this journey, so far as regards Botany alone, has been nearly 300 species of plants, in a very high state of preservation, and several sets have been already sent to the subscribers in England. Among them are a new and very distinct species of *Anemone* found in damp woods near the coast, called "*Estrellas*" by the natives (*A. hepaticifolia*, nob. mst.), some new *Berberides*, 2 new *Azaræ*, *Lardizabala trifoliata*, hitherto considered only a native of Peru, *Crinodendron Patigua*, *Eucryphia cordifolia*, Cav., a new *Tropæolum* (*T. Bridgesii*, nob. mst.), some new *Eugenias*, one or two new species of *Escallonia*, 2 *Araliaceæ*, 2 species of the curious and rare genus *Misodendron* (*M. microphyllum*, Hook. and Arn. and *M. punctulatum*, *DC.*) a beautiful *Desfontainesia*, (probably *D. spinosa*, Ruiz and Pavon) *Quadria heterophylla*, R. and P. (the famous *Avellano* of that part of Chili,) 2 *Luzuriagas*, the splendid *Lapigeria*, and another species, of this or a nearly allied genus (*L. Hookeri*, Bridges, mst.); several Ferns, (many of them, however, similar to those found by Mr. Cuming in Chiloe) &c. When our last letter left Valparaiso, (August 27, 1833,) Mr. Bridges was on the eve of a journey to that range of the Andes which lies between Chili and Conception, where, we trust, he will have reaped an abundant harvest.

Mr. Bridges' specimens, like Mr. Mathews', are in general named, as far as his means will allow him to do so, the stations correctly given, and they are most carefully preserved. We understand that besides dried specimens, he has sent numerous seeds and roots for cultivation, and he cannot have failed thus to introduce many new and highly interesting plants to our gardens, even more suited to cultivation in the open air than those of the warmer parts of Chili.

On the opposite side of the vast continent of South America, on the Plata, the Parana, and Uraguay, an unassuming, but most indefatigable Botanist, Mr. Tweedie, has long been diligently engaged in collecting the vegetable productions, as we have announced in the former Numbers of this Journal. He has since extended his researches to St. Catharine in S. Brazil, chiefly in company with his Excellency H. S. Fox, Esq., British Envoy at Rio Janeiro. From Buenos Ayres, these naturalists sailed about 60 miles up the Rio Uraguay, and thence returned along the coast of the Banda Oriental, "not passing a single port or point," observes Mr. Tweedie, "where the ship could go, without landing and strictly searching every hill and valley where any thing was to be found," till they reached the Rio Grande del Sul, where they spent some time and then proceeded to Rio Janeiro. In his different excursions Mr. Tweedie has collected upwards of 1000 species, which have been communicated to us, and will be more particularly noticed in our "Contributions to the Flora of South America."

The northern parts of the Atlantic side of South America we trust will soon be better known to Botanists, by the researches of Mr. Schomburgk, who has offered his services to explore the banks of the Orinoco; and it is to be hoped he will shortly embark for that interesting country from Tortola, where he has long been resident. He is a very accomplished naturalist, and is favourably known to Science by an interesting History of Anagada, one of the cluster of the Virgin Islands; and to the Botanist still more favourably, by his excellent observations on the cultivated Plants of the West Indies, given in two letters published in the 8th vol. of the "Linnæa," for the year 1833.

In New Holland, Mr. Collie, who was one of the naturalists in Captain Beechey's late voyage of discovery, has formed extensive collections at the Swan River and along the coast southward to Leeuwin's Land. Mr. Richard Cunningham, (brother to Mr. Allan Cunningham, who has effected much towards illustrating the Natural History and Geography of that vast and interesting country,) has been appointed by the Colonial Office to succeed Mr. Fraser in the charge of the Government Botanic Garden of Sydney, and his zeal will, we cannot doubt, extend our knowledge of Australian plants: while, in the neighbouring island of Van Dieman's Land, we are proud to number among our correspondents two most indefatigable Botanists, R. W. Lawrence, Esq., of Formosa, and Ronald Gunn, Esq., of Launceston. Their collections communicated to us, and likewise to Professor Lindley, are extensive and valuable, and we trust ere long to give some account of them in these pages.

In Ceylon, Colonel Walker, Deputy-Adjutant-General, resident at Kandy, together with his accomplished lady, are zealously engaged in collecting and drawing the plants, many of which are so celebrated for their beauty and their aromatic* fragrance.

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* Linnæus with much taste and judgment thus draws a comparison between the vegetation of Ceylon, and, as it would appear, that of his native country, Sweden; "A delicious climate has granted to this island plants of such variety and value, that scarcely any soil can vie with it, for the abundance of its aromatic productions. Whilst *Pine-forests* occupy our cold and sterile regions, in Ceylon, the *Cinnamon-Trees* constitute whole groves; in such plenty indeed, that the inhabitants are accustomed to employ the wood for household furniture, for fuel and for cooking. Our orchards are planted with *Apples, Pears, Plums* and *Cherries*, and other similar trees; but in Ceylon, nothing is esteemed save the lofty *Palms*, among which the *Cocoa-Nuts* chiefly afford the needful food, utensils, and every thing necessary to mankind. The *Caryota* there yields a wine called *Suri;* and the *Corypha*, or Fan-Palms, extend their broad, smooth and plaited fronds, which serve for shade and shelter, there most requisite for protection from the sun's rays, as well as from sudden showers, to the natives, whose only garment is a scanty covering of linen. *Date Palms* and the superb *Bananas*, decorated with wide-spreading and glossy foliage, present, in great profusion, racemes of the most delicious fruit; to say nothing of the more valuable productions with which the soil every-where abounds, such as *Mangoes*, the *Jack*, *Malay-Apples*, *Psidia*, *Oranges* and *Citrons*, *Cashew-Nuts*, *Averrhoas*, &c.—Our fields are sown with common *Barley* and *Rye;* but those of the Cingalese receive nothing but *Rice*, which affords them flour and bread. Our marshes are covered with *Callæ;* theirs with the fragrant *Amoma*. *Persicarias* occupy our waste places; but with them grow different species of *Pepper*. In our meadows spring the *Ranunculus*, *Plantains*, *Convallarias*, and many other neglected plants; in theirs, numerous kinds of *Hedysarum*, *Galega*, *Hibiscus*, *Justicia*, *Cleome*, *Impatiens*, *Amomum*, *Myrtle*, and *Ricinus;* besides numerous climbers, as *Ipomæa*, *Dioscoræa*, *Basella*, *Aristolochia*, *Ophioglossum*, *Phaseolus*, *Momordica*, *Bryonia*, *Vine*, *Cissus*, *Pothos*, *Loranthus* and *Acrostichum*. In the room of the *Meadow-Sweet* and

A country the most opposed to this, in respect of climate and productions, is Siberia. Thither, anxious to obtain a complete knowledge of its vast territories, and at the suggestion we believe of our valued friend Dr. Fischer, the Imperial Government of Russia has sent a botanist, Mr. Turtsharinow, to explore those distant uncultivated regions, from whose researches much that is interesting may be expected. In 1830, he set out, for an indefinite number of years, to visit eastern Siberia, from the sources of Yenissey to the eastern ocean, a country, the investigation of which would tend materially to the perfecting of a Flora of the Russian empire. With the particulars of his journey and the exact extent of his collections, we are not acquainted, but we know that many plants have reached Petersburgh, and some are put aside for us by our valued friend Dr. Fischer, who however observes in his last letter dated October 31, 1833, "It is a long time since we had any information from Turtsharinow. He ought to have directed his steps to the border of the Amor, as far as it can be done without reaching the Chinese avant-postes. He set out for Nertchiusk in the month of May, (1833,) and we are now daily expecting letters on his return, for there is no possibility of his wintering in those inhospitable tracts."

The 2d and concluding part of the 5th volume of Sir J. E. Smith's English Flora, (or the 2d of Dr. Hooker's British Flora) is in the press. It will comprize the only remaining Order, the *Fungi*, and the difficulties of preparing this can

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Mints, the pastures in Ceylon are scented with *Basil*, and the woods with *Cinnamon*. Every-where occur the most precious Aromatics, *Ginger*, *Cardamom*, *Galanga*, *Costus*, *Acorus*, *Schœnanthus*, *Calamus aromaticus* and flowers of the most exquisite colour, structure and fragrance, such as *Crinum*, *Pancratium*, and *Gloriosa*, as well as those plants which saturate the night air with their delicious scent, such as the *Tuberose* (*Polyanthes*) and *Nyctanthes*." Most of these are equally natives of the islands of the Indian Archipelago.

only be appreciated by those who have undertaken to study the individuals of this extensive and fugacious family of Plants. Happily our able friend, the Rev. M. J. Berkeley, undertook to prepare, and has now completed, the Agaric and Boletus tribes, which he has long made a peculiar object of study.

At the moment this page is going to the press, we have the pleasure to receive from our valued friend Mr. Schærar,* the 9th and 10th Fasiculi of his "*Lichenes Helvetici Exsiccati*," a work of the importance of which we have elsewhere spoken, especially in the English Flora (*v. V. Part I. p.* 140), together with the fourth and fifth sections of his "*Lichenum Helveticorum Spicilegium*," which accompany them as the illustrative descriptions. The work now embraces 250 species, of which the specimens are most excellent, and arranged in a remarkably neat and judicious manner, in small 4to. volumes, of which one part forms a sort of box, for the reception of those species which require a thicker portion than usual of the rock or substance on which they grow. In this they are fastened, along with their names, by means of strong glue. The similarity of the Swiss Lichens with those of Britain, the correct manner in which they are named and characterized by the able author, render this work of the highest consequence to the student of Lichens in this country; and we learn with pleasure that a few copies have been sent to Mr. Ackerman, in the Strand, for sale.

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* Lewis Emanuel Schærar, Minister of Lauperswyl in the Canton of Berne.

NOTICE CONCERNING MR. DRUMMOND'S COLLECTIONS, MADE CHIEFLY IN THE SOUTHERN AND WESTERN PARTS OF THE UNITED STATES.

(Continued from p. 60 of this Volume.)

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IN a former communication respecting Mr. Drummond, we left him at New Orleans with the intention of proceeding, by the Red River, to Natchatoches on his way to Texas: but circumstances induced him to alter his route, as mentioned in his letter, dated "Covington* Sept. 2d, 1832." Thence he sent an ample collection of plants, among which are many interesting ones, besides a considerable number of mosses, and above 100 kinds of seeds, together with roots for cultivation. Among the seeds, are those of a most beautiful *Nuttallia*, (*N. Papaver*, *Bot. Mag. t.* 3287,) and among the latter, plenty of the little known *Sarracenia psittacina*, Mich.

Notwithstanding the general unhealthiness of the climate, and the unusually sickly season, (cholera having been very fatal,) this enthusiastic naturalist enjoyed an excellent state of health, exposed though he was to the mid-day sun (while the thermometer ranged from 96—100° in the shade,) and frequently to unwholesome dews at night. So rapid too is the evaporation, in consequence of the great heats, that were not the specimens placed in the papers immediately upon being gathered, they would have been quite destroyed. Mention is made of a very remarkable bank of shells in this letter. "The rivers here," he says, "seem to be entirely destitute of shells, either small or large; and it is remarkable that I have met with only one kind in the great lake of Pontchartraine; and dead specimens of this form banks of several miles in extent, running into the interior of the country. Maddisonville is built upon one of these; but to what depth they reach, or at what period they were formed, I have no means of determining."

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* There is a "Covington" in Alabama, which I erroneously conceived to be the town expressed in the letter: so that some of the collections were distributed as from "Alabama;" but I afterwards ascertained that the Covington here alluded to is in Louisiana. I was further misled by finding that several plants formerly transmitted to me from Alabama, through other channels, were identical with those found around Covington by Mr. Drummond.

Previous to his embarkation for Texas, Mr. Drummond made an excursion to Jacksonville, whence another box was sent early in the present year, 1833, and this, together with one again from the vicinity of New Orleans, which arrived in July last, complete the Louisiana collection,* amounting, Mr. Drummond reckons, in all (exclusive, however, of Cryptogamia) to 1000 species. As the selecting and distribution of these has devolved entirely upon myself, I have found it impossible to put numbers to the whole, as I had intended; and the utility of the following list will thereby be somewhat diminished. But as the respective collections which contain the species, are always referred to, it will not be difficult, with the further assistance of Pursh, Elliott, or Nuttall's works, for those even who were previously unacquainted with American Botany, to determine them. The first portion of the *New Orleans* collection, is alone distributed with Numbers.

The collections from around *Philadelphia* (here marked "*Pennsylvania*"), the *Alleghanies*, *Wheeling*, and *Ohio*, being very limited, and comparatively of little interest, have been but partially distributed. It is otherwise with those from *St. Louis* on the Missouri, *N. Orleans*, including Pontchartraine, (*first collection*, readily distinguished by the printed labels and numbers), *Covington*, *Jacksonville*, and *N. Orleans*, (*second collection.*) Of most of these there were many duplicates, and a large portion of them are in possession of the subscribers; preference, in regard to number, being given to those friends of Mr. Drummond who contributed most largely to his outfit, or who were the earliest to subscribe.

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* Two collections of extremely interesting plants have since been received from Texas, which being considerably different from those of the more Eastern States, will form the subject of a separate paper.

I am indebted to Dr. Greville for assistance in determining the names of several plants from St. Louis, and to Mr. Arnott for the same service with regard to the first collection from New Orleans. I only regret that a similar advantage was not afforded me with the rest of this extensive Herbarium. I have, however, received most important aids in the numerous authentic specimens of plants of the Southern States, given me by my excellent friends, Dr. Boott, Dr. Torrey, Mr. Nuttall, B. D. Greene, Esq., the late Mr. Elliott, Dr. Wray, Dr. Darlington, Dr. Short, and Mr. Townsend, without which my catalogue would have been far more imperfect than it now appears. William Wilson, Esq., has kindly undertaken the examination of the Mosses, which, though by no means so numerous as those of the Northern States, yet contain some highly curious species. It is intended to accompany the distribution of these with names.

Besides the service I trust this catalogue may render to those who possess any portion of Mr. Drummond's plants, it may be considered useful as showing the geographical range of the species it embraces.

I. RANUNCULACEÆ.

1. Clematis *Walteri*, Ph.—C. lineariloba, *DC.*—New Orleans, without flowers. (*n.* 1.)—I can scarcely doubt but that *C. lineariloba* is a variety of *C. Walteri*, with narrower

leaflets. Upon some of Mr. Drummond's specimens the leaflets are lanceolate, upon others truly linear, resembling the former species, as given in De Lessert's Icones, *v.* i. *t.* 3. Those with the broader foliage approach very near the narrow-leaved varieties of *C. Viorna.*

2. *C. Viorna,* L.—N. Orl. (*n.* 2.)—This, together with *C. cylindrica,* Sims, *C. reticulata,* Walt. and even *C. crispa,* L. (unless it be correct that the latter plant has really a very short cauda to the fruit, as observed by *De Candolle,* in which case it belongs to a different section), are involved in much obscurity; nor do I possess materials sufficient to enable me to clear up the difficulties. Mr. Drummond's specimens have ovate, rarely approaching to cordate, *membranaceous* leaflets. I have received the same from Louisiana, gathered by M. Tainturier; from S. Carolina, by B. D. Greene, Esq., marked "*C. Viorna?*" and a variety, with ovato-lanceolate and lanceolate leaflets, gathered by Dr. Wray, in Georgia. The flowers are membranaceous, of a pale dingy purple. These all accord with *C. cordata,* Sims, *Bot. Mag. t.* 1816, (*C. reticulata, ej. op. Ed.* 2. *t.* 2.) and with *C. crispa,* Sims, *Bot. Mag. t.* 1892. The *C. Viorna,* in my Herbarium from Dr. Short, (Kentucky,) has more coriaceous and shorter flowers, and these latter apparently of a deeper and bluer colour, resembling my cultivated specimens of *C. cylindrica* in every respect, and equally so the *C. cordata* of Sims, above-mentioned, except that the flowers are shorter.

3. Thalictrum *anemonoides,* Mich.—Pennsylvania. I have beautiful specimens of this from West Chester, gathered by Dr. Darlington and Mr. Townsend: and from the latter I possess the "*T. rugosum?*" Darl. and "*T. pubescens?*" Darl.: both of which I am disposed to join with *T. Cornuti. T. corynellum* of Bigelow (according to Mr. Greene) I also refer to *T. Cornuti.* (See remarks upon *T. Cornuti* in *Hook. Fl. Bor. Am. v.* i. *p.* 3.)

4. Anemone *nemorosa,* L.; and var. *β. quinquefolia,* DC. (A. quinquefolia, *L.*).—Alleghanies.—The two states are

found growing together by Mr. Drummond: as well as by Mr. Townsend near West Chester, Pennsylvania.*

5. Myosurus *minimus*, L.—M. Shortii, Raf.—N. Orl. (*n.* 3.)

6. Ranunculus *Flammula*, L.—Ohio.

7. R. *pusillus*, Poir.—Pennsylv. N. Orl. (*n.* 4.)

8. R. *abortivus*, L. N. Orl. 1833.

9. R. *recurvatus*, Poir.—Alleghanies. Ohio. N. Orl. (*n.* 5.) —β. *minor*. Pennsylvania. Much smaller and slenderer. I possess the same var. from Mr. Greene, gathered near Charleston, S. Carolina, in which the stems show a disposition to become stoloniferous.

10. R. *hispidus?* Mich.—St. Louis.—This specimen is too imperfect to enable me to decide upon the species.

11. R. *fascicularis*, Muhl.—Pennsylvania.—β. foliis radicalibus ovatis integris.—N. Orl. 1833, (in two states.)

12. R. *muricatus*, L.—N. Orl. (*n.* 6.) Alleghanies.

(From Dr. Darlington I have received a specimen of Ran. *trachyspermus*, gathered in Virginia, which enables me to determine that species to be identical with the R. *parviflorus*, L. I possess the same, without name, from Dr. Torrey, discovered by Mr. Le Conte in Georgia.)

(I am indebted to my valued correspondent, Dr. Short of Lexington, for most beautiful specimens of the rare *Enemion triternatum* of Rafinesque. It is identical with the European *Isopyrum thalictroides*, in every thing except the presence of petals. But it can neither be separated from that Genus nor from that species without violence to nature: so that

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* I am anxious to notice here, a most remarkable state of *A. Virginiana*, found at Tewkesbury, by Mr. Greene, smaller in all its parts than usual, bearing only one flower arising from a 3-leaved petiolated involucre, and having a remarkably elongated and perfectly cylindrical head of carpels. I am the more disposed to agree with Mr. Greene in considering it a variety of *A. Virginiana*, because I possess in Gouan's Herbarium, a specimen of which the fruit is more elongated than usual, though much less so than in the individual in question.

I would consider it an apetalous variety of *Isopyrum thalictroides.* "It grows abundantly around Lexington, along with *Thalictrum anemonoides*, Mich., flowering in the spring. The seeds ripen about the middle of June; soon after which the plant disappears, not to show itself again until early in the ensuing year." *Short*, in litt.)

13. Aquilegia *Canadensis*, L.—Pennsylvania.

14. Delphinium *tricorne*, Mich.—Alleghanies.—I possess the same plant from Mr. Greene, gathered at Harper's Ferry, and from Dr. Torrey, gathered in Kentucky.

15. Actæa *racemosa*, *L.*—Ohio.

MAGNOLIACEÆ. *DC.*

16. Illicium *Floridanum*, L.—N. Orl. (*n.* 7.)

17. Magnolia *grandiflora*, L.—N. Orl. (*n.* 8.) Covington. St. Louis.—There are specimens, without flowers, of what appears to be a *Magnolia*, from Covington, with leaves twice as long as those of *M. grandiflora*, much thinner, and between obovate and lanceolate. The young branches too are very downy. May these not be the *var.* γ. *lanceolata* (Hort. Kew.) of *M. grandiflora?*

18. M. *auriculata*, Lam.—Covington.—The specimens are destitute of flowers.

19. *M. glauca*, L.—N. Orl. (*n.* 9.) St. Louis.—This is the acute-leaved variety.

ANONACEÆ. *Juss.*

20. Asimina *parviflora*, Dun.—Covington, Louisiana.

MENISPERMACEÆ. *Juss.*

21. Cocculus *Carolinus*, DC.—Menispermum Carolinum, L.—Wendlandia populifolia, Willd.—N. Orl. (*n.* 8. bis.)

22. Menispermum *smilacinum*, DC.—Pennsylvania.

BERBERIDEÆ. *Vent.*

23. Leontice *thalictroides*, L.—Caulophyllum thalictr. *Mich.*—Alleghanies.

PODOPHYLLACEÆ. *DC.*

24. Jeffersonia *diphylla*, Pers.—Alleghanies.
25. Cabomba *aquatica*, Aubl.—N. Orl. (*n.* 10.)
26. Hydropeltis *purpurea*, Mich.—Covington, Louisiana.

NYMPHÆACEÆ. *DC.*

27. Nelumbium *luteum*,* Willd.—Covington (Leaf only).—This superb aquatic, which, strange to say, is unknown in the gardens of our country, grows as far north as the latitude of Kentucky, whence I have beautiful specimens from Mr. Townsend.
28. Nymphæa *odorata*, Ait.—N. Orl. (*n.* 11.)
29. Nuphar *advena*, Ait.—Jacksonville.

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* Dr. Short of Kentucky writes me word, in respect to the *Cyamus luteus;* "I have once met with it in all its glory in a small lake near the Cumberland river in this State, and in that very section of it which I design to visit next summer. The plant, however, is so luxuriant, and its flowers so large and succulent, that I should fear their preservation will be extremely difficult, if not impossible, in any perfection. A somewhat curious circumstance respecting this plant, presented itself to me not long since. As just observed, I never saw it growing but once; and then two hundred miles west of this place; nor have I heard of its being met with any where else in this region. On the Ohio river, a hundred miles north of Lexington, my brother owns a considerable tract of land, a piece of which adjoining the river was subject to inundation, and in a shallow basin of 50 acres or more, the water remained throughout the year. Twenty years ago this basin was drained, sown in grass and is now a productive meadow,—the upper stratum being a tough, whitish clay. In ploughing this piece of ground lately, immense quantities of the seeds of the *Cyamus* were turned up from among the clay in which they were embedded to a considerable depth; they are perfectly sound and hard, requiring much effort to break them open, and exhibiting, within, the cotyledons and embryo, full, plump and apparently fresh:—none of them, however, manifest the slightest disposition to vegetate. The plant has certainly not grown there for twenty years; and the oldest resident of the neighbourhood has no recollection of having ever seen it."

PAPAVARACEÆ. *Juss.*

30. Argemone *Mexicana*, L.—New Orl. (*n.* 15.) Covington, Louisiana.

31. Meconopsis *petiolata*, DC.—Alleghanies.

32. Sanguinaria *Canadensis*, L.

SARRACENIEÆ. *Pyl.*

33. Sarracenia *flava*, Mich.—St. Louis. N. Orl. (*n.* 12.)

34. S. *psittacina*, Mich.—N. Orl. (*n.* 13.) Jacksonville, Louisiana.—β. *minor;* foliis pulcherrime venoso-pictis, ala majori.—N. Orl. (*n.* 14.)—This is a very little-known plant, and one of the most beautiful and striking of this curious genus. The tube is very narrow, and the wing remarkably broad, the appendages small and bent down, so as, together with the swelling outline of the wing, to present the appearance of the head and body of a parrot: whence the appropriate name. I have received from Mr. Greene the true *S. rubra* (*Ex. Fl. t.* 13,) and *S. variolaris*, gathered near Charleston, S. Carolina.

FUMARIACEÆ. *DC.*

35. Corydalis *aurea*, L.—Pennsylv. N. Orl. (*n.* 16.)

CRUCIFERÆ. *Juss.*

36. Nasturtium *natans*, De Cand.—*De Less. Ic. v.* ii. *t.* 15.—N. Orl. (*n.* 19.)

37. N. *palustre*, DC.—N. Orl. (*n.* 17.)—St. Louis.

38. N. *tanacetifolium*, Hook. and Arn.—Nasturtium palustre, δ? tanacetifolium, *DC.*—Sisymbrium tanacetifolium, *Walt.* —S. Walteri, *Ell. Carol. v.* ii. *p.* 146.—N. Orl. (*n.* 18.)—This has too much the appearance of a distinct species to allow of its being considered a variety of the preceding. It is a small plant, remarkably dense and compact, with numerous leaves, the lower ones pinnated with copious leaflets; the

upper, all of them, very deeply pinnatifid. It appears to grow only in the Southern States. I have received it from Mr. Elliott (as his *Sisymbrium Walteri*), from Mr. Parker and from M. Tainturier, as well as from Mr. Drummond.

39. Arabis *hirsuta*, L.—Alleghanies.

40. Arabis *lævigata*, DC.—Turritis lævigata, *Willd.*—Alleghanies.

41. Cardamine *hirsuta*, L.—C. Pennsylvanica, *Auct. Amer.*—N. Orl. (*n.* 20.)—Var. *teres.* Hook. and Arn.—C. teres. *Mich. DC.*—N. Orl. (*n.* 21.) In this state the leaflets of the upper leaves are lanceolate, those of the lower ones orbicular.

42. Cardamine *Ludoviciana;* caulibus procumbentibus, foliis inferioribus bipinnatifidis laciniis lineari-oblongis, superioribus pinnatifidis hic illic grosse dentatis laciniis linearibus lineari-spathulatisve, siliquis erectis linearibus planis obscure venosis stylo breviusculo terminatis, seminibus orbicularibus compressis limbatis.—Sisymbrium Ludovicianum. *Nutt. MSS. in Herb. nostr.*—N. Orl. (*n.* 22.) Louisville; but sent in the St. Louis collection.

This plant I have long known as an inhabitant of the embouchure of the Mississipi from specimens sent to me by Mr. Parker, and by Mr. Tainturier; and I was at first disposed to refer it to one of the numerous varieties of *C. hirsuta;* but the more rigid foliage, the (comparatively) broad flat pods; and, above all, the constantly margined seeds forbid such an union. The general habit of the plant is similar to that of *Nasturtium tanacetifolium:* the lower leaves are all, always, bipinnatifid (or pinnate with the pinnæ decurrent, linear, or linear-oblong deeply pinnatifid, with few segments.) The flowers are small, white. I possess a solitary specimen of the same plant from Dr. Torrey, marked "Kentucky, *Cardamine Virginica?* distinct from the northern *C. Virginica.*" The latter indeed does not at all differ from *C. hirsuta.* I am aware that, according to De Candolle's character, the margined seeds would exclude our plant from *Cardamine:* but it wants the "middle nerve" on the capsule of *Arabis*, and must naturally rank next to *C. hirsuta.* The cotyledons are accumbent, it cannot therefore be a *Sisymbrium.* Mr. Nuttall's specimens are from the banks of the Mississipi, so that this species is principally confined to the great valley formed by that river and its tributary streams.

43. C. *rhomboidea,* DC.—Alleghanies. Pennsylvania.

44. C. *rotundifolia,* Mich.—Alleghanies. See remarks upon this and the preceding species, in the Botanical Miscellany, *v.* iii. *p.* 237. *t.* 108, 109.

45. Dentaria *laciniata,* Muhl.—Alleghanies. St. Louis.

46. D. *diphylla,* Mich.—Alleghanies. St. Louis.

47. Draba *dentata,* Hook. and Arn.—Alyssum dentatum, *Nutt. Gen. v.* 2. *p.* 63.—Draba arabizans of *Pursh,* but not of *Mich.,* (according to Nuttall)—Harper's Ferry, Virginia.—Certainly a *Draba,* and a most distinct and well marked plant. Mr. Greene, as well as Mr. Drummond, has gathered it in Muhlenberg's original station, where it grows on slaty rocks. Dr. Short finds it in similar situations, "Cliffs of the Kentucky river, rather rare," with more rigid, longer and sharper leaves, and longer and sharper teeth. Mr. Nuttall well observes that it cannot be the *Draba arabizans* of Michaux, which is a more northern plant, and compared by that author with *D. incana,* with which it is probably identical.

48. Hesperis *pinnatifida,* Mich.—Alleghanies.

49. Sisymbrium *arabidoides,* Hook.—Pennsylvania.

50. Lepidium *Virginicum,* L.—Covington, Louisiana.

51. L. *ruderale,* L.—St. Louis. N. Orl. (*n.* 24.)

52. Senebiera *pinnatifida,* DC.—N. Orl. (*n.* 23.)

CAPPARIDEÆ. *Juss.*

53. Gynandropsis *pentaphylla, DC.*—N. Orl.

CISTINEÆ. *Juss.*

54. Helianthemum *Carolinianum,* Mich.—N. Orl. (*n.* 25.)

55. Lechea *villosa,* Ell.—St. Louis. Covington, Louisiana.

56. L. *minor,* Persl.—Covington, Louisiana.

57. L. *racemulosa*, Mich.—Covington, Louisiana.—Probably, as Dr. Torrey and other American botanists suspect, only a large state of *L. minor*.

VIOLARIEÆ.* *DC.*

58. Viola *pedata*, L.—Pennsylvania. N. Orl. 1833.

59. V. *palmata*, L.—N. Orl. (*n.* 26,) 1833. Pennsylvania.

60. V. *asarifolia*, Nutt.—N. Orl. 1833. Pennsylvania.

61. V. *cucullata*, Ell.—N. Orl. (*n.* 27.)—Var. (?) foliis triangulari-cordiformibus. St. Louis. Probably *V. asarifolia*, Ph.

62. V. *primulæfolia*, L.—N. Orl. (*n.* 8.) and 1833. Pennsylvania.

63. V. *lanceolata*, Forst.—Pennsylvania.

64. V. *ovata*, Nutt.—Pennsylvania.

65. V. *sagittata*, Ait.—Pennsylvania.

66. V. *blanda*, Nutt.—Alleghanies. Pennsylvania.—β. foliis magis rigidis. N. Orl. 1833.

67. V. *rotundifolia*, Mich.—Alleghanies.

68. V. *striata*, Ait.—V. ochroleuca, *Schwein.*—Alleghanies.

69. V. *rostrata*, Muhl.—Alleghanies.

70. V. *debilis*, Ph.—Alleghanies.—This is only a small-leaved state of *V. Muhlenbergiana*, DC.

71. V. *Canadensis*, Linn.—Alleghanies.

72. V. *pubescens*, Ait.—Alleghanies. Pennsylvania.

73. V. *bicolor*, Ph.—V. tenella, *Schwein.*—Alleghanies.—I possess this from the Missouri, gathered by Mr. Parker, from Mount Vernon (the tomb of General Washington) and Virginia, gathered by Mr. Greene, as well as from Bethlehem, by M. Schweinitz: and these all have a peculiar character, considerably different from that of *V. tricolor*: so that I am still in doubt whether the plant should be united

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* I may here mention that Dr. Short finds, about Lexington, Kentucky, by the sides of rivulets, the rare *Solea concolor*, Forster, in considerable plenty.

with the European species or not. Dr. Beck thinks it distinct, and he probably is correct. It has been cultivated at the Belfast Botanic Garden, whence also I have specimens.

DROSERACEÆ. *Salisb.*

74. Drosera *brevifolia*, Ph.—N. Orl. (*n.* 29.)—β. *major*; foliis magis petiolatis. Covington, Louisiana.—This is twice the size of α., and approaches *D. longifolia*; but the leaves are still much broader and cuneate.

75. D. *longifolia*, L.—D. intermedia, *DC.*—D. foliosa, *Ell.* —N. Orl. 1833.

76. Parnassia *Caroliniana*, Mich.—β. foliis majoribus latioribus, non raro orbiculari-reniformibus, petalis viridi-pictis, nectariis stamina duplo superantibus, polline aurantiaco.—N. Orl. 1833.—This differs from the northern species of the same name in its considerably larger size, broader and more cordate leaves, and especially in the much longer nectaries, shorter stamens, and deep orange-coloured pollen. It retains these characters in cultivation. May it not be *P. grandifolia*, DC.?

POLYGALEÆ. *Juss.*

77. Polygala *incarnata*, L.—N. Orl. (*n.* 30.)—St. Louis.

78. P. *fastigiata*, Nutt. (according to specimens from the author.)—N. Orl. (*n.* 32.) and 1833. Covington, Louisiana.

79. P. *cuspidata*, Hook. and Arn. (not of DC., which is *P. Timoutoua*, Aubl.)—P. cruciata, *Nutt.* (non *Linn.*)—N. Orl. (*n.* 31.) Covington.—Well distinguished from P. *cruciata*, L. (P. *brevifolia*, Nutt.) by the remarkably cuspidato-acuminate alæ to the flowers.

80. P. *lutea*, L.—N. Orl. (*n.* 33.)

81. P. *nana*, DC.—P. viridescens, *Nutt.*—N. Orl. (*n.* 34.) Jacksonville, Louisiana.

82. P. *bicolor*, Humb. et Kunth, Nov. Gen. *v.* v. *p.* 394. *t.* 507.—N. Orl. 1833.—This, though coming nearest to *P. verticillata*, is quite different. The root is perennial; stems a foot and a half and more high; the verticillate leaves are obovato-lanceolate, pellucido-punctate, the upper and alter-

nate ones, alone, linear; spike very long and flowers much larger than in *P. verticillata.*

83. *P. verticillata*, L.—N. Orl. (*n.* 35.) St. Louis.

84. P. *attenuata*, Hook. (non *Nutt.*), racemis laxis apice attenuatis, pedicellis longitudine floris, alis ovatis acutis concavis carinam barbatam vix superantibus, caule gracili elongato angulato ramoso, foliis (parvis) linearibus oppositis raro quaternis superioribus alternis.—Jacksonville, Louisiana.—Habit of *P. ambigua*, Nutt. and *P. sanguinea*, Linn. (according to Nutt. in Herb. nostr.), but very different in size and in the flowers and racemes. It is remarkable for the lax spike and long pedicels of the flowers, which, in the dry state, appear flat and membranous. The flowers seem to be greenish. Stems very slender, erect, a foot and a half high. Root annual.

85. P. *corymbosa*, Mich. (non *De Cand.*)—P. attenuata, *Nutt.*—P. graminifolia, *Poir.*—N. Orl. (*n.* 36.) Covington, Louisiana.

86. P. *ramosa*, Ell.—P. corymbosa, *Nutt.* and *DC.* (non *Mich.*)—N. Orl. (*n.* 37.) Covington, Louisiana.

87. P. *Senega*, L.—Alleghanies.

88. P. *polygama*, Walt.—P. rubella, *Ph.*—N. Orl. (*n.* 38.)

89. P. *pubescens*, Nutt.—Covington, Louisiana.

90. P. *paucifolia*, L.—Alleghanies.

CARYOPHYLLEÆ. *Juss.*

91. Silene *Antirrhina*, L.—N. Orl. (*n.* 39.)—Var. *minor.* St. Louis.—A very small plant, 6—8 inches high, and extremely slender: yet apparently agreeing with S. *Antirrhina.*

92. S. *regia*, Sims, *Bot. Mag. t.* 1724. Nutt. Gen. *v.* 1. *p.* 288.—S. Catesbæi, *Walt.?* *De Cand.?*—St. Louis.—A very superb species, excellently figured in the Botanical Magazine, and as well described by Mr. Nuttall, who discovered it at St. Louis, and considers it "one of the most splendid species in existence."

93. S. *Pennsylvanica*, Mich.—Alleghanies. Pennsylvania.

94. Sagina *procumbens*, L.—N. Orl. (*n.* 40.) Pennsylvania.

(Mr. Greene has found the *Sagina apetala*, near Baltimore: and also the *Moenchia glauca*.)

95. Mollugo *verticillata*, L.—St. Louis. N. Orl.

96. Spergula *arvensis*, L.—N. Orl. (*n.* 41.) This, and the others of the stipuled-leaved section of *Spergula*, have been lately united to the section *Spergularia* of *Arenaria*, and removed as a Genus, to *Paronychieæ*.

97. Stellaria *media*, Sm.—N. Orl. (*n.* 42.)

98. S. *pubera*, Mich.—Pennsylvania.

99. Arenaria *stricta*, Mich. —Alleghanies.

100. A. *diffusa*, Ell.—N. Orl. (*n.* 43.)

(I have received *Arenaria serpyllifolia* from N. Orleans, gathered by M. Teinturier; probably an introduced plant.)

101. Cerastium *vulgatum*, L.—C. hirsutum, *Darl.* and *Elliott*, (non *Tenore.*)—N. Orl. (*n.* 44.)

102. C. *viscosum*, L.—var. *elongatum;* pedunculis valde elongatis.—N. Orl. (*n.* 45.)

103. C. *arvense*, L.—C. Pennsylvanicum, *Auct. Amer.* C. oblongifolium, *Darl.*—Pennsylvania.

LINEÆ. *De Cand.*

104. Linum *Virginianum*, L.—α. pedunculis erectiusculis. N. Orl. (*n.* 46.)—β. pedunculis patentissimis. N. Orl. (*n.* 47.) Covington, Louisiana.—γ. minus, foliis crebrioribus. N. Orl. 1833.

105. L. *rigidum*, Ph.—St. Louis.

MALVACEÆ. *Juss.*

106. Malva *Caroliniana*, L.—N. Orl. (*n.* 48.)

(*M. rotundifolia* I have received from M. Teinturier, gathered near N. Orleans.)

107. Nuttallia *Papaver*, Grah. in *Bot. Mag. t.* 3287.—Malva *Papaver*, Cav. Diss. *p.* 64. *t.* 15. *f.* 3.—Covington, Louisiana.—I am now acquainted with 4 species of this genus, if genus indeed it may be called, for I fear that it will be difficult to find characters by which it can be distinguished from *Sida* on the one hand, and *Malva* on the other. Two are natives of the Arkansa, *N. digitata*, and *N. pedata*,

and being destitute of bracteas, they may be referred to *Sida.* Two others are furnished with 3 bracteas constituting an involucre, and are therefore referable to *Malva;* of these one is a native of Alabama, the *Malva triangulata* described in *Silliman's Journal, v.* 7. *p.* 60:—the other, a native of Louisiana, as above stated, was introduced to our gardens by Mr. Drummond in 1833, and figured in the Botanical Magazine. At one time I agreed with my valued friend Dr. Graham, in considering it a new plant. But on again turning my attention to the subject, I found that it was well described and figured by Cavanilles, who expressly declares it to be a native of "Louisiana;" whereas Willdenow and succeeding authors, copying each other, it would appear, have marked its native country "Lusitania!"

The fruit of *N. Papaver,* consists of 10—12 indehiscent, much compressed, kidney-shaped, whitish *cocci,* each with a short greenish incurved beak; the surface beautifully pitted. In *N. pedata,* the beak is large and conical, and the surface is less pitted. Cavanilles observes that the French inhabitants of Louisiana called our plant *Coquelicot,* on account of the resemblance of its flowers to those of *Papaver Rhœas.* In *Nuttallia* (Malva, *Silliman's Journ.*) *triangulata,* the whole plant is very hispid with stellated hairs, and the leaves, or bracteas of the involucre, are spathulate, not linear.

108. Hibiscus *Virginicus,* L.—N. Orl.

109. H. *scaber,* Mich.—Covington, Louisiana.

110. H. *Moscheutos,* L.—N. Orl. St. Louis.

111. H. *palustris,* L.—St. Louis.

112. H. *incanus,* Willd.—St. Louis. A very beautiful and apparently a little known species. The leaves are quite velvety on both sides, and the flowers, when spread open, between 5 and 6 inches across, and sulphur-coloured with a purple eye. I possess the same plant in a small collection gathered in Louisiana, by Mr. Barabino. Mr. Elliott is unacquainted with the species, and observes, "it is said to have been discovered by Bartram, but I believe has escaped the notice of all recent botanists."

113. H. *militaris*, Cav.—H. hastatus, *Mich.*—St. Louis.

114. H. *Carolinianus*, Muhl.?—*Ell. Carol. v.* 1. *p.* 168.—N. Orl.—This is the *H. Carolinianus* of Elliott; it is perhaps but a state of *H. militaris*, with more entire leaves than usual.

115. Gossypium *arboreum*, L.—Covington, Louisania. St. Louis.

116. Sida *spinosa*, L.—Jacksonville, Louisiana. St. Louis.

117. S. *rhombifolia*, L.—Jacksonville, Louisiana. N. Orl. 1833.

118. S. *hispida*, Ph.—St. Louis.—In this plant, which I can scarcely doubt is the *S. hispida* of Pursh, the linear bracteas approach so near to the calyx as to resemble an outer calyx, or involucre. The carpels are few, rounded, downy, opening by a longitudinal fissure at the back.

119. S. *Abutilon*, L.—St. Louis.

TILIACEÆ. *Juss.*

120. Tilia *glabra*, Vent.—T. Americana, *L.*—Alleghanies.

121. T. *heterophylla*, Vent.—Alleghanies.

(I possess the *Corchorus siliquosus*, from Louisiana, gathered by Mr. Teinturier.)

TERNSTRŒMIACEÆ. *DC.*

122. Stewartia *Virginica*, Cav.

HYPERICINEÆ. *Juss.*

123. Hypericum (Elodea) *paludosum*, Chois.—Elodea petiolata, *Ph.*—Jacksonville, Louisiana. I have received the same from M. Teinturier. This seems to be *H. axillare*, Mich., but certainly not of De Candolle.

124. H. (Elodea) *Virginicum*, L.—Jacksonville, Louisiana.

125. H. *angulosum*, Mich.—Covington, Louisiana.—De Candolle's character, "floribus axillaribus solitariis," is by no means correct; the flowers are in a terminal corymbose leafless panicle. Nor are the styles by any means constantly coadunate: in my specimens they are free for their whole length. My Georgia specimens exactly correspond with those from Louisiana.

126. H. *punctatum*, Lam.—N. Orl. (*n.* 49.)

127. H. *micranthum*, Mich.—St. Louis.

128. H. *nudiflorum*, Mich.—St. Louis. Covington, Louisiana.—*var.* foliis majoribus brevissime petiolatis. Covington. —The specimens of this variety are in fruit. The panicle is much less dense, and the leaves are thrice as large.

129. H. *prolificum*, Willd.—N. Orl. (*n.* 52.)

130. H. *simplex*, Mich.—Covington.

131. H. *quinquenervium*, Walt.—H. parviflorum, *Willd.* —St. Louis. Covington.

132. H. *galioides*, Lam.—N. Orl. (*n.* 50.)

133. H. *rosmarinifolium*, Lam.? *Ell. Carol. v.* ii. *p.* 276. —Covington.

134. H. *fasciculatum*, Lam. Ell.—Covington. N. Orl. (*n.* 51.)—The leaves of this are narrow, linear, and fascicled: it is a very beautiful species.

135. Ascyrum *Crux Andreæ*, L.—β. *angustifolium*, De Cand. H. multicaule, *Mich.*—Covington.—I possess the same var. from the Bahamas; nor does the broad-leaved, usual state of *A. Crux Andreæ* appear to be found in Louisiana, where the present is very abundant. *A. pumilum*, Mich., which I have from Georgia, appears to be only a dwarf state of *A. Crux Andreæ.*

136. A. *amplexicaule*, Mich.—Covington.—Except by the greater ramification and the somewhat broader leaves, this is not to be distinguished from *A. stans*, L.

137. Sarothra *gentianoides*, L.—Jacksonville. Covington.

138. S. *Drummondii*, Hook. and Grev. *Bot. Misc. v.* iii. *p.* 236. *t.* 107.—St. Louis. N. Orl. 1833.

ACERINEÆ. *Juss.*

139. Acer *striatum*, Lam.—Alleghanies.

140. A. *montanum*, Ait.—A. *spicatum*, Lam. *DC.*—Alleghanies.

141. A. *saccharinum*, L.—Alleghanies.

142. A. *rubrum*, L.—N. Orl. (*n.* 54.—in *flower* only.) Alleghanies (in *leaf.*)—β? foliis rigidis minus cordatis. N. Orl. (*n.* 55.)—γ? foliis rigidis subtus albo-tomentosis. N.

Orl. (*n.* 53).—I am quite doubtful respecting what I have here called β. and γ. Mr. Arnott and myself were at one time disposed to refer the foliage of β. to *A. saccharinum:* but if the flowers distributed really belong to the same plant, it is probably referable to *A. rubrum;* and the var. γ. we had proposed calling *A. Drummondii.* The fruit distributed certainly belongs to the foliage: still, without flowering specimens, I have thought it safer to consider it a *var.* of the present species. The forest-trees are eminently difficult of investigation, except to those who have the advantage of studying them on their native soil.

143. A. *dasycarpum*, Willd.—A. eriocarpum, *Mich.*—Alleghanies, Jacksonville (foliage); flowering specimens (but I am doubtful if they certainly belong to this species), N. Orl. (*n.* 56.)

144. Negundo *fraxinifolium*, Nutt.—N. Orl. (*n.* 57.) St. Louis.

HIPPOCASTANEÆ. *DC.*

145. Pavia *rubra*, Lam.—N. Orl. (*n.* 58.)

MELIACEÆ. *Juss.*

146. Melia *Azederach*, L.—N. Orl. (*n.* 59.)

AMPELIDEÆ. *H. & K.*

147. Ampelopsis *cordata*, Mich.—St. Louis. N. Orl. (*n.* 60.)

148. A. *hederacea*, Mich.—St. Louis (fruit only).

149. A. *bipinnata*, Mich.—Cissus stans, *Pers.*—N. Orl. 1833.

150. Vitis *Labrusca*, L.—N. Orl. (*n.* 61.)

151. V. *æstivalis*, Mich.—N. Orl. 1833.

152. V. *cordifolia*, Mich.—Jacksonville. Alleghanies.

153. V. *riparia*, Mich.—V. incisa, *Jacq. Schoen. t.* 427.—Covington (in fruit).

154. V. *rotundifolia*, Mich.—N. Orl.—My specimens of this exactly agree with the description of Elliott, who, however, thinks, that the *V. vulpina* of Walter, and even of Linnæus, may be the same. Mr. Greene has sent me a

Vitis, native of N. Carolina, but cultivated about Boston, under the name of *Scuppernon Grape*, with leaves similar in shape to those of our present plant, but smaller and more membranaceous and of a paler and more delicate green colour.

GERANIACEÆ. *Juss.*

155. Geranium *Carolinianum*, L.—St. Louis. N. Orl. (*n.* 62.)

BALSAMINEÆ. *Juss.*

156. Impatiens *fulva*, Nutt.—St. Louis.
157. I. *pallida*, Nutt.—St. Louis.

OXALIDEÆ. *De Cand.*

158. Oxalis *corniculata*, L.—St. Louis. Alleghanies.

159. O. *stricta*, L.—Pennsylvania. N. Orl. (*n.* 62.) Jacksonville.—Among the numerous specimens of *O. stricta* or *O. corniculata*, I may have confounded *O. Dillenii*, Jacq., *O. Lyoni*, Ph., *O. recurva* and *O. furcata*, Ell., which I confess myself unable to distinguish.

160. O. *violacea*, L.—Pennsylvania.

FLOERKEÆ. *Br.* (?)

161. Floerkea* *uliginosa*, Willd.—Pennsylvania.

CELASTRINEÆ. *Br.*

162. Euonymus *atropurpureus*, Jacq.—Alleghanies. St. Louis.

163. E. *Americanus*. L.
164. Celastrus *scandens*, L.—St. Louis.
165. Ilex *opaca*, Ait.—N. Orl. (*n.* 64.)

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* Professor Lindley, in the 1st. No. of the present Journal, seems inclined to refer this Genus to *Rosaceæ*, Div. *Sanguisorbeæ*. Mr. Brown, I understand, has also recently studied the Genus, and, if I am not misinformed, has placed it near *Rutaceæ;* but not having seen the Memoir, (if indeed, it be published,) I am ignorant of the name he has given to the new Order.

166. I. *Dahoon*, Walt.—N. Orl. (*n.* 65, bis.)

167. I. *Cassine*, Ait.—N. Orl. (*n.* 65.) Specimens with leaves only.

168. I. *angustifolia*, Willd.—Var. foliis lineari-oblongis integerrimis. N. Orl. (*n.* 66, sterile.) Covington, Louisiana: in fruit.

169. I. *vomitoria*, Ait.—N. Orl. (*n.* 67.)

170. Prinos *deciduus*, DC.—N. Orl. (*n.* 68,) and 1833. (fr.) St. Louis, in leaf only.

171. P. *ambiguus?* Mich.—St. Louis, (in fr.) N. Orl. (*n.* 69: only foliage.)

172. P. *verticillatus*, L.—N. Orl. (*n.* 70, bis.)—I am far from being certain about this species and the preceding and *P. lævigatus* of authors.

173. P. *glaber*, L.—N. Orl. (*n.* 70.) and 1833. Jacksonville, (with fruit and very large leaves: and again in fruit with very small leaves.)

174. Nemopanthes *Canadensis*, DC.—Alleghanies.

RHAMNEÆ. *Br. DC.*

175. Berchemia *volubilis*, *DC.*—N. Orl. (*n.* 71.)

176. Rhamnus *Carolinianus*, Walt.—N. Orl. (*n.* 72.)

177. Ceanothus *Americanus*, L.—N. Orl. (*n.* 73.) St. Louis (a very hairy var.)

TEREBINTHACEÆ. *Juss.*

178. Rhus *pumila?* Mich.—Alleghanies.

179. R. *copallina*, L.—Covington. St. Louis.

180. R. *Vernix*, L.—Covington (fr.)

181. R. *radicans*, L.—Alleghanies.

182. R. *Toxicodendron*, L.—N. Orl. Alleghanies.

183. R. *aromatica*, Ait.—Alleghanies.

184. Ptelea *trifoliata*, L.—St. Louis. Covington.

(To be Continued.)

OBSERVATIONS ON SOME OF THE CLASSICAL PLANTS OF SICILY.

BY JOHN HOGG, ESQ., M.A., F.L.S., M.R.G.S., F.C.P.S., &c.

(Continued from p. 147 of the present Volume.)

ULMACEÆ.

126. **Celtis australis.—European Nettle-Tree.—Lote-Tree.** This I consider the true Lotus-tree of the Lotophagi. Λωτὸς τὸ δένδρον. *Diosc. lib.* i. *cap.* 172, and *Theoph. lib.* iv. *cap.* 4. *Sibthorp* and *Stackhouse* are also of the same opinion.

Dioscorides describes it as a great tree, bearing a fruit (a *drupe*) larger than that (a *berry*) of the Pepper-Tree, which is sweet, pleasant to eat, and good for the stomach;—εὐμέγεθες, καρπὸν δὲ φέρει μείζονα πεπέρεως γλυκῆ, βρώσιμον, ευςόμαχον.

Theophrastus has given a good description of it; he calls the tree εὐμέγεθες, of the size of a Pear-tree; and states that the leaves are serrated, ἐντομὰς ἔχουσι, the fruit as large as a bean, κύαμος, placed like the berries of the Myrtle, changing colour in ripening, as a bunch of grapes, sweet, pleasant and wholesome, and the food of the Lotophagi;—γλυκὺς, ἡδὺς, καὶ ἀσινὴς, καὶ ἔτι πρὸς τὴν κοιλίαν ἀγαθός.—Wine was also made of the berries: the wood of a dark colour, μέλαν. There were several varieties of this Tree, which differed in their fruit; the best grew in Libya. The wood was used, among other purposes, for making pipes, or flutes, αὐλοὺς. Herodotus mentions that the Lotophagi subsisted on the fruit of the Lote-Tree only, which is as large as the berry of the Mastich, and resembles in sweetness a Date.—Λωτοφάγοι τὸν καρπὸν μοῦνον τοῦ Λωτοῦ τρώγοντες ζώουσι· ὁ δὲ τοῦ Λωτοῦ καρπὸς, ἐςι μέγαθος ὅσον τε τῆς Σχίνου· γλυκύτητα δὲ, τοῦ Φοίνικος τῷ καρπῷ προσείκελος.—Ποιεῦνται δὲ ἐκ τοῦ καρποῦ τούτου οἱ Λωτοφάγοι καὶ οἶνον.—*Melp. cap.* 177.

Pliny (*lib.* xiii. *cap.* 17.) says,—Africa insignem arborem Loton gignit, quam vocant *Celtin.*——Incisuræ folio crebriores——fructus color croci, sed ante maturitatem alius atque alius, sicut in uvis——tam dulci ibi cibo, ut nomen etiam genti terræque dederit, nimis hospitali advenarum oblivione patriæ—vinum quoque exprimitur illi simile mulso.

If we compare the descriptions of the ancient authors with the character of the *C. australis*, we shall be strongly confirmed in the supposition that it is the real Lotus Tree.

It is a tree of large size, εὐμεγέθης, growing to forty or fifty feet in height; the bark dark-coloured; the wood hard, and blackish, which is much prized for making flutes and other musical instruments: the leaf resembles that of the *Nettle*, having the edges serrated, φύλλον δὲ ἐντομὰς ἔχει, from whence comes the English name. The fruit or berry is about the size of a small cherry, first yellow, and then, when ripe, dark brown or black; of an agreeable sweet flavour, and placed on a long peduncle.

Dr. *Asso* mentions that the berries are eaten in Spain; and *Dr. Walsh* relates that the modern Greeks are very fond of them. They are called in Romaic, μελικόκκια, *Honey-berries*, according to *Dr. Sibthorp*.

So Homer gives it the epithet μελιηδέα.—*Od. lib.* ix. *v.* 93.

Τῶν δ' ὅς τις Λωτοῖο φάγοι μελιηδέα καρπὸν,
Οὐκ ἔτ' ἀπαγγεῖλαι πάλιν ἤθελεν, οὐδὲ νέεσθαι.

Such was the poetical account of this *too sweet* fruit, that whoever ate it, forgot his native land. To strangers it was therefore, the "Forbidden Fruit;" but it might, perhaps, in one case, be prescribed medicinally in that fatal complaint, *Nostalgia*, or the ardent and lingering desire of return to one's country!

This Tree I observed in some gardens, or orchards, on the base of Mount Etna; it is also named in Sicily *Lotu*.

CONIFERÆ.

127. Pinus maritima.—Sea Pine.

Πεύκη παραλία, *Theoph. lib.* iii. *cap.* 10, on the authority of *Sprengel.* It is probably the πεύκη of Theocritus, *Idyl.* vii. *v.* 88. The cone of the Sea Pine was called στρογγύλος τῆς παραλίας, which Theophrastus describes as being στρογγύλος τῆς παραλίας καὶ διαχάσκων ταχέως. In Sicily, tar, pitch, resin, and turpentine (*Terebintina*), are taken from these trees, and also from other kinds of Pines.

128. P. Pinea.—Stone Pine.

Πεύκη κωνοφόρος, *Theoph. lib.* iii. *cap.* 10, according to *Sprengel.* This author refers the πίτυς, *Theoph.*, to *P. Larix*, but *Stackhouse* to *P. sylvestris.* This is the "Πίτυς of the ancients, which is common in the maritime districts of Asia Minor and Syria."—"The Πίτυς," says *Coray*, "is now called κοκκωνάρια, from the fruit κοκκωνάριον, anciently called στρόβιλος"; κοκκώνη also was an ancient name. The kernels of the Stone Pine are brought to table in Turkey; they are very common in the kitchens of Aleppo. *Russel.*" (*Walpole's Turkey*, *p.* 236, *note* 2.) This Pinus abounds in Attica, and grows to a large size in the forests of Elis. *Sibthorp.* Moschus calls the Isthmus of Corinth abounding in Pines, πιτυώδεο Ἰσθμοῦ. *Idyl.* iv. *v.* 49. And Strabo (*lib.* ix.) gives the epithet πιτυοῦσσα, to Salamis. The cone of the Stone Pine was properly named κῶνος πίτυος; thus Theocritus,—βάλλει δὲ καὶ ἁ πίτυς ὑψόθε κώνους. *Idyl.* v. *v.* 49; and πιτυίδες signify the seeds. Confer. *Diosc. lib.* i. *cap.* 88. But in Latin, the cones were called *Nuces*, vel *Poma Pinea.* See Macrobius' story, *Saturnalia, lib.* ii. *cap.* 6; and an Epigram by Martial, *Lib.* xiii. *Ep.* 25. The seeds are now named *Pinócchi*, in Italy and Sicily, and are used in desserts, in puddings and cakes, like almonds. This tree was sacred to Neptune; a chaplet of its leaves was given to the victors in the Isthmian Games. A cone fastened on the top of a staff adorned with wreaths or flowers made the Thyrsus of the Bacchanalians. I suppose the Stone Pine must originally have been introduced from Greece into Italy and Sicily, as I never observed it in a natural wood; a few with their broad-spreading tops are seen picturesquely placed about villas, and farm-houses. This is the species mentioned in Horace, *Ode* xxii. *Carm. lib.* 3.

> Imminens villæ tua Pinus esto.

And by Virgil, *Ecl.* vii. *v.* 65. Pulcherrima Pinus in hortis.

The gentle murmuring of the wind among the branches of this Pine, has frequently been noticed by ancient poets. Theocritus begins the first Idyl,

> Αδύ τι τὸ ψιθύρισμα καὶ ἁ πίτυς, αἰπόλε, τήνα,
> Ἁ ποτὶ ταῖς παγαῖσι μελίσδεται.——

And Moschus, *Idyl.* v. *v.* 8, says,—

> Ἔνθα καὶ, ἢν πνεύσῃ πολὺς ὤνεμος, ἁ πίτυς ᾄδει.

But the roaring of the wind through an extensive Pine forest is astonishing, and bears the nearest resemblance to the deep and loud noise of a stormy sea.

129. Cupressus sempervirens.—Common Cypress.

In Sicilian *Cipressu;* Κυπάρισσος, *Diosc. lib.* i. *cap.* 103. Κυπάριττος, *Theoph. lib.* i. *cap.* 5. This tree, being sacred to Pluto and Proserpine, was planted about tombs. Horace calls Cypresses, *funebres*, and *invisas*. They are still planted in burial grounds and cemeteries in the South of Europe, and in the East. Pliny well describes the tree—"natu morosa, fructû supervacua, baccis torva, folio amara, odore violenta, ac ne umbra quidem gratiosa,——Diti sacra, et ideo funebri signo ad domos posita. *Lib.* xvi. *cap.* 33.

Thus Byron, in his own beautiful words,—

> ————————Cypress! 'tis
> A gloomy tree, which looks as if it mourn'd
> O'er what it shadows.

(*Cain, Act.* iii. *sc.* 1.) and see a similar description in the *Bride of Abydos, canto* ii. *stanza* 28.

Theophrastus has stated, that the Cypress dies if it be decapitated, or have its top cut off,—*ἐὰν ἄνωθεν ἐπικοπῇ τὸ ἄκρον, φθείρεται.* (*Lib.* iv. *cap.* 19.) But Pollard Cypress-trees are frequently met with in the modern gardens of Italy in a flourishing condition.

The wood was said never to decay, and was used in turning and carving; Theophrastus asserts,—*τὰ δὲ ἀγάλματα γλύφουσιν ἐκ τῆς Κυπαρίττου,* that statues were cut from the Cypress. (*lib.* v. *cap.* 5.) Also Theocritus mentions, *Idyl.* v. *v.* 104. *γαυλὸς Κυπαρίσσινος,* a bowl made of Cypress, and Thucydides, cypress coffins—*λάρνακας κυπαρισσίνας.* (*lib.* ii. *cap.* 34.) Theocritus gives *κυπάρισσος,* the epithets *ῥαδινὴ, Idyl.* xi. *v.* 45, and *Idyl.* xxvii. *v.* 45; *ἀκρόκομος. Idyl.* xxii. *v.* 41, and *εὐώδης, Epig.* iv. *v.* 7. Like the Stone Pine, the Cypress is domesticated in Sicily about villas, hence Theocritus calls the tree an ornament to the garden. (*Idyl.* xviii. *v.* 29.)

———————*κόσμος ἀρούρᾳ*
'Η *κάπῳ* Κυπάρισσος.

And in the following verse the "chant of trees," or "melody of summer winds," among the leaves and boughs, is elegantly described (*Idyl.* xxvii. *v.* 57.) 'Αλλάλαις λαλέοντι *τὸν γάμον αἱ* Κυπάρισσοι. For an account of some very old and venerable Cypresses, confer *Dodwell, vol.* i. *p.* 121.

130. Juniperus Sabina.—Savin.

Κεδρία, *ἢ κεδρίς.* *Theoph. lib.* i. *cap.* 15, according to *Stackhouse.*

131. J. Oxycedrus.—Brown-berried Juniper.

Ὀξύκεδρος. *Theoph. lib.* iii. *cap.* 12. apud *Sprengelium.*

CLASS II. MONOCOTYLEDONES.

IRIDEÆ.

132. Crocus odorus. *Bivona.*—Sweet-scented Crocus.

C. foliis rigidis subcoætaneis, spathâ 1-phyllâ, corollæ tubo longissimo, staminibus stigmata incisa superantibus corollâ brevioribus, bulbo reticulato-fibroso.

Hab. in pascuis apricis Siciliæ. (*Spreng. Syst. Veget. vol.* i. *p.* 146.) Surely this species is the κρόκος ἔυοσμος, of Theophrastus, *lib.* ix. *cap.* 7.

133. Ixia Bulbocodium. *Pers.* (I. purpurascens, *Ten.?*) *Fl. Græc. vol.* i. *t.* 36. *Bot. Mag. vol.* viii. *t.* 265.

Uncertain if this be the Βολβοσυκώδιον, *Theoph. lib.* vi. *cap.* 7. It is now called κατζα, according to *Dr. Sibthorp.*

Frequent in the Sicilian pastures.

134. Iris Sisyrinchium, *Pers.* (Moræa Sisyrinchium, *Curt.*) European Spanish-Nut.—*Fl. Græc. vol.* i. *t.* 42. *Bot. Mag. vol.* xxiv. *t.* 1407.

Σισυρίγχιον. *Theoph. lib.* vii. *cap.* 13. Αγριοκρῖνος hodiè *Sibth.* Common near Catania, Palermo, &c. *Bivona.*

135. I. tuberosa.—Snake's head Iris.—*Fl. Græc. vol.* i. *t.* 41. *Bot. Mag. vol.* xv. *t.* 531.

Λογχῖτις. *Diosc. lib.* iii. 161. Its singular flowers are described by Dioscorides as resembling gaping comic masks with the tongues projecting.

In fields about Mount Etna. *Bivona.*

AMARYLLIDEÆ.

136. Narcissus Tazzetta.—Polyanthus.—*Fl. Græc. vol.* iv. *t.* 308. *Bot. Mag. vol.* xxiv. *t.* 925.

Νάρκισσος ἔνδον κροκῶδες. *Diosc. lib.* iv. *cap.* 161. apud *Fl. Græc.* Hab. in pratis et pascuis Siciliæ.

137. Pancratium maritimum.—Sea Pancratium.—*Fl. Græc. vol.* iv. *t.* 309.

Παγκράτιον ἢ Σκίλλα. *Diosc. lib.* ii. *cap.* 203.—Ἄγρια σκίλλα, hodiè *Sibth.* I am inclined to refer the κρίνον, *Theoph. lib.* vi. *cap.* 6, to this species, as also λευκὸν τὸ κρίνον, Theocritus, *Idyl.* xxiii. *v.* 30, and the κρίνα λευκὰ, *Idyl.* xi. *v.* 56, rather than to *Lilium candidum*, as *Stackhouse* has done. The latter plant, I believe, is not a native of Sicily, or Greece, but of Palestine and Syria, on the authority of Linné, Miller, and Persoon. Forskal considers the elegant flowers of *P. maritimum* to be "the lilies of the field," spoken of by Christ. (*Matth. chap.* vi. *v.* 28.)

Observed in sandy places along the coast.

138. Amaryllis lutea.—Yellow Amaryllis.—*Fl. Græc. vol.* iv. *t.* 310. *Bot. Mag. vol.* ix. *t.* 290.

Now called in Greece the *Wild Lily*, Ἀγριοκρίνα ἢ ἀγριόλαλες, potius λαλὲς hodiè (*Fl. Græc. p.* 10), where Sir J. E. Smith remarks,—"hinc *Liliis agrestibus* Evangelii, longè meliùs quam *Lilia candida* Hortorum, nunquam in Syriâ spontè crescentia, proculdubio respondent, quod nomine Græco hodierno confirmatur."

The Turks plant this flower on the graves of their friends. *Sibth.*

In woods, near Catania, and Nicolosi, and elsewhere upon the base of Mount Etna.

ASPHODELEÆ.

139. Asphodelus luteus.—Yellow Asphodel.—*Bot. Mag. vol.* xx. *tab.* 778.—*Stackhouse* supposes this to be the ἀνθέρικος, *Theoph. lib.* i. *cap.* 7. The Scholiast, on *v.* 52. *Idyl.* i. of Theocritus, interprets ἀνθέριξ, to signify the *stem* of the Asphodel, ἀνθέρικος, with which a boy is making a trap to catch grasshoppers; the verse is,—

> Αὐτὰρ ὅγ᾽ Ἀνθερίκεσσι καλὰν πλέκει ἀκριδοθήραν.

The plant is common on Mount Etna, in the woody region.

140. A. ramosus.—Branching Asphodel.—*Fl. Græc. vol.* iv. *Bot. Mag. vol.* xxi. *t.* 799.

'Ασφόδελος. *Diosc. lib.* ii. *cap.* 199, also of *Theoph. lib.* vii. *cap.* 12.

In Romaic, 'Ασφόδελω, or 'Ασφουδούλο, and καραβούκι. *Sibth.* See Theocritus, *Idyl.* vii. *v.* 68, and *Idyl.* xxvi. *v.* 4. Dioscorides says the Asphodel was well known, and the *flower* was called ἀνθέρικος; the whole plant was much used in medicine. It was fabled to grow in the Elysian fields, or "ever-flowering meads of Asphodel," 'Ασφοδελὸν λειμῶνα, as Homer calls them: hence probably the ancient Greeks were wont to place this Asphodel on the tombs of their friends. Thus in the Epigram of Porphyry, a tomb is made to say,—"on the outside I have the Mallow, and *many-rooted Asphodel*, but within a person."

Νώτῳ μὲν Μαλάχην τε 'Ασφόδελον πολύῤῥιζον,
Κόλπῳ δὲ τὸν δεῖνα ἔχω.——

See also a like inscription on a funereal vase, *tab.* xxxvi., *Series I. of Millingen's Unedited Monuments.*

By these the following verse of Hesiod is explained (*Op. et dies, v.* 41).

Οὐδ' ὅσον ἐν Μαλάχῃ τε καὶ 'Ασφοδέλῳ μέγ' ὄνειαρ.

Abundant in pastures, and in the uncultivated parts of the island.

141. Scilla maritima.—Officinal Squill.—*Bot. Mag. vol.* xxxiii. *tab.* 918.

Σκίλλα, *Diosc. lib.* ii. *cap.* 202. Σκύλλα, *Theoph. lib.* vii. *cap.* 12. ἄσκιλλα, Græc. hodiern. *Sibth.* Confer Theocritus, *Idyl.* v. *v.* 121.

Σκίλλας ἰὼν γραίας ἀπὸ σάματος αὐτίκα τίλλοις.—"Go quick, and pluck up the old Squills from the grave." The word σκίλλαισιν occurs *Idyl.* vii. *v.* 107. The Squill is still used, as in the time of Dioscorides, for a diuretic in dropsies, ἐπὶ ὑδρωπικῶν.

I noticed the large bulbs of this plant in most dry, and sandy places in Sicily, but in more abundance near the sea-shore.

142. Allium sativum.—Cultivated Garlic.

Σκόροδον ἥμερον, *Diosc. lib.* ii. *cap.* 182; and Σκόροδον, *Theoph. lib.* vii. *cap.* 4, according to *Sprengel;* but *Stackhouse* considers it *A. Scorodoprasum.*

143. Asparagus acutifolius.—Sharp-leaved Asparagus.—*Fl. Græc. vol.* iv. *t.* 337.

Ἀσπάραγος, *Diosc. lib.* ii. *cap.* 152.—Ἀσφάραγος, *Theoph. lib.* vi. *cap.* 3.—Σπαράγγι, ἢ Σφαραγγιὰ in Romaic; but in Cyprus it is still named ἀσπάραγος. *Sibth.*—In Sicilian, *Asparagu.*

The young stems, or heads, were eaten by the ancients. Dioscorides says they softened the stomach and produced urine. Theophrastus relates, that the stem rose up out of the Asparagus-bed in the spring, and was fit for food,—ἀναβλαςάνει δὲ ὁ καυλὸς ἐκ τῆς Ἀσφαραγίας τοῦ ἦρος, καὶ ἐδώδιμός ἐςιν.

The young heads of this species, and of the *A. albus*, are cut from wild plants, (inculti asparagi, apud *Martial*) and brought to table in Sicily; they are thin, bitter, and often stringy, and form a poor substitute for the cultivated, or garden, Asparagus.

144. Hyacinthus comosus.—Purple Hyacinth.—*Bot. Mag. vol.* iv. *t.* 133.

Βολβὸς ἐδώδιμος, *Diosc. lib.* ii. *cap.* 200, and βολβός, *Theoph. lib.* vii. *cap.* 13. (*Sprengel.*) According to *Sibthorp* the bulbs of this Hyacinth are still eaten in Greece. Probably it is the Βολβός mentioned in Theocritus, *Idyl.* xiv. *v.* 17.—Common in fields, flowering early in May.

145. Ruscus Hypophyllum.—Broad-leaved Butcher's Broom.—*Bot. Mag. vol.* xlvi. *t.* 2049.

Δάφνη Ἀλεξάνδρεια, *Diosc. lib.* iv. *cap.* 147; also of *Theoph. lib.* i. *cap.* 16, which is described as ἐπιφυλλόκαρπος, bearing the fruit upon the leaves. Dioscorides says its leaves are larger, softer, and whiter than those of the Common Butcher's Broom (*R. aculeatus*) μυρσίνη ἀγρία, ἢ ὀξυμυρσίνη, (prickly Myrtle) which is the κεντρομυῤῥίνη of *Theoph. lib.* iii. *cap.* 17.

SMILACEÆ.

146. Smilax aspera.—Rough Bindweed Smilax.

Σμῖλαξ τραχεῖα. *Diosc. lib.* iv. *cap.* 144.—Σμῖλαξ. *Theoph. lib.* iii. *cap.* 18, where it is well described. Now called Σμῖλαγγια in Laconia; but ξυλόβατος in the island of Cyprus. *Sibth.* Theophrastus says the flower is white, sweet-scented, and coming forth in the spring,—ἄνθος δὲ λευκον και ἐυῶδες ἠρινόν. Hence "the fragrancy of the flowers is alluded to in the words of Aristophanes,—Σμίλακος ὄζων. (Nubes, 1006.)" *Walpole.* Euripides also has, *Bacchæ, v.* 107,

> Βρύετε, βρύετε χλοηρᾷ
> Σμίλακι καλλικάρπῳ.

The berries of this Evergreen, when ripe, are of a beautiful red colour. This *Smilax*, and a variety β. *auriculata*, are found creeping up hedges, trees, &c., in Sicily.

PALMÆ.

147. Phœnix dactylifera.—Date Palm.

Φοίνιξ. *Diosc. lib.* i. *cap.* 149, and of *Theoph. lib.* ii. *cap.* 8. Palma, Pliny *lib.* xiii. *cap.* 4. Now called *Palma* by the Sicilians. Mr. *Dodwell* (*Vide Tour through Greece, vol.* i. *p.* 371,) confirms the statement of Theophrastus, that the Palm does not ripen its fruit in Greece, (See *lib.* ii. *cap.* 3.) The most ancient tree was in Delos, (*lib.* iv. *cap.* 14.) It is mentioned in Euripides, *Hecuba, v.* 457, πρωτόγονός φοίνιξ; and again in *Eurip. Iphig. in Taur. v.* 1100, in the following lines,—

> ————————Αρτεμιν λοχείαν,
> Ἁ παρὰ Κύνθιον ὄχθον ὄικει,
> Φοίνικὰ δ' ἁβροκόμαν.———

And in Homer's Hymn to Apollo, *v.* 115. *Ælian, Var. Hist. lib.* v. *cap.* 4. The impregnation of Palms was known to the ancients, and Theophrastus states the manner in which the male flower fertilizes the female fruit; it was called, ὀλυνθίαζειν. γινεται δὲ τόνδε τὸν τρόπον. ὅταν ἀνθῇ τὸ ἄῤῥεν, ἀπότεμόντες τὴν σπάθην ἀφί *ἧς τὸ ἄνθος ἐυθυσαῦσπερ ἔχει, τόν τε χνοῦν καὶ τὸ ἄνθος καὶ τὸν κονιορτὸν κατασείων κατὰ τοῦ καρποῦ της θηλείας.*—*i. e.* by shaking the pollen of the male flower upon the female. Herodotus (*Clio. cap.* 193.) says that Palms were treated in the same way as in caprifying figs, by tying the fruit of the male on the females (*βαλανηφόροι*) in order that the insect (*ψῆν*) might enter the female fruit, and cause it to ripen.

Hasselquist has described (*p.* 417,) the Arabian method which is nearly that of Theophrastus; and Shaw testifies (*Travels, p.* 142,) that sprinkling the farina of the male on the female Palm flowers is still a common practice in Egypt. It is mentioned also by Pliny, *lib.* xiii. *cap.* 4, who observes, "est Veneris intellectus, ut coitus etiam excogitatus sit ab homine, ex maribus flore ac lanugine, interim verò tantum pulvere insperso fœminis." And again,—afflatû visûque ipso et pulvere etiam reliquas (fœminas) maritare. Hence Claudian elegantly says,

> Vivunt in Venerem frondes, omnisque vicissim
> Felix arbor amat, nutant ad mutua Palmæ
> Fœdera.———

The fruit or Date, called *Dátteru* in Sicilian, was named *φοινικοβάλανος* by Dioscorides, and by Herodotus *βάλανος*.

The Date-Tree is most valuable to the Egyptian, indeed his principal wealth consists in having plantations of it, "arbusto Palmarum dives." (*Lucan.*) Many of the poorer class live entirely on Dates, and there is great commerce in selling this fruit. Herodotus remarks, *καὶ σιτία καὶ οἶνον καὶ μέλι ποιεῦνται,* that they afford food, and wine, and honey. Pliny tells us (*lib.* xiii. *cap.* 21.) that Palm leaves were used for writing on, previous to the invention of paper (*Charta*) from the Papyrus. The wood is valuable for different purposes; baskets are made of the leaves; ropes and sails of the web-like threads between the boughs. One of the most ancient countries in the world took its name from this tree, and in Scripture it frequently occurs as a sacred emblem. Several of the antique Sicilian coins bear a representation of a Palm-Tree. It was formerly very abundant in Sicily, and is said to have been destroyed by the barbarian nations who laid waste the island, during the middle ages.

It is this Tree, the American Aloe, and the Indian Fig, which give to the Sicilian landscapes, a singularly beautiful, almost a tropical appearance.

148. Chamærops humilis.—Dwarf Fan-Palm, or Ground-Palm. *Bot. Mag. vol.* xlvii. *t.* 2152.

Dioscorides mentions three sorts of Palm, Φοίνιξ; this must be one of the dwarf or Ground Palms, *ἐκ των χαμαιζήλων φοινίκων*, which are not described, *lib.* i. *cap.* 150. It is doubtless the Χαμαιρεφὴς, *Theoph. lib.* ii. *cap.* 8, the leaves of which are woven together for making baskets and mats; it is abundant in Crete, and still more so in Sicily. *Διὸ καὶ πλέκουσιν ἐξ ἀυτοῦ τάς τε σπυρίδας καὶ τοῦς φορμους πολλοὶ δε καὶ ἐν τῇ Κρήτη γίνονται, καὶ ἔτι μάλλον ἐν Σικελίᾳ* Pliny likewise says, "Chamæropes—— copiosæ in Cretâ sed magis in Siciliâ." *Lib.* xiii. *cap.* 4.

It is the *Palma agrestis* of Cicero, "cujus erat in his locis" (propè Pachynum) "sicut in magnâ parte Siciliæ, multitudo." Confer in Verrem *lib.* v. *cap.* 33. and 38, where it appears that the root was occasionally eaten. The Ground Palm, called in the Sicilian dialect *Palmetta*, *Giummara*, and *Curina*, covers the wild uncultivated land and hills, as the Furze does with us, and chiefly in the South of the island. Hence Virgil gave the appropriate epithet *Palmosa* to the ancient Selinus. A kind of light, but strong hat is made by neatly plaiting the leaves together; and the plant is used for brooms, seats for chairs, thatch for poor houses, and many other purposes. A species of wasp (*Vespa Gallica*) fixes its small paper-like nest to the folded fan-shaped leaves. In like manner, in India the Palm Swift (*Cypselus Palmarum*) builds its nest on the leaves of the larger Palms.

GRAMINEÆ.

149. Panicum miliaceum.—Common Millet.

Κέγχρος, *Diosc. lib.* ii. *cap.* 119, and *Theoph. lib.* viii. *cap.* 3. Also in modern Greek κέγχρι. *Sibth.* Hesiod mentions the

Millet, and says it came into ear, when the sour grapes changed colour.—*Scut. Her. v.* 398.

> Ἠμὸς δὴ Κέγχροισι περὶ γλῶχες τελέθουσι,
> Τούς τε θέρει σπείρουσιν, ὅτ᾽ ὄμφακες αἰόλλονται.

Little Millet, *lu migliu*, is grown in the Island.

150. Arundo Donax.—Cultivated, or Pipe Reed.

Κάλαμος δόναξ. *Diosc. lib.* i. *cap.* 115. Δόναξ, *Theoph. lib.* iv. *cap.* 12, where it is described as being the most shrubby, and the most common of the κάλαμοι, and chiefly growing by rivers and marshes. Now called κάλαμο, according to *Sibthorp.* It is the *Donax* of Pliny, *Hist. Nat. lib.* xvi. *cap.* 36.

The stems of this Reed are useful for many domestic purposes in Italy, and Sicily; for fences in gardens and vineyards, for props to bind vines to, for making pipes, distaffs, fishing-rods, walking-sticks, &c. Hence Horace, "equitare in Arundine longâ." Homer describes Mercury as using the Donax in forming the Testudo, or Lyre.

> Πῆξε δ᾽ ἄῤ ἐν μέτροισι ταμὼν Δόνακας Καλάμοιο
> Πειρήνας διὰ νῶτα λιθοῤῥίνοιο χελῶνης (*Hymn in Merc. v.* 46.)

Theocritus calls the shepherd's pipe, Δόναξ. *Vide Idyl.* xx. *v.* 29.

> Κῆν ἀυλῳ λαλέω, κῆν Δώνακι, κῆν πλαγιαύλῳ

Again in *Epigram* ii. *v.* 3, τὼς τρητὼς Δόνακας.
And Moschus has the following line, *Idyl.* iii. *v.* 55.

> Αχὼ δ᾽ ἐν Δονάκεσσι τεὰς ἐπιβόσκετ᾽ ἀοιδάς.

In Theocritus' Idyl of the Fisherman, κάλαμοι signify fishing-rods, see x. *v.* 43, 47. But Oppian, *Halieut.* iii. *v.* 75, names them Δόνακες.

151. A. festucoides, *Pers.* Fescue-like Reed. (A. Ampelodesmos, *Cyr.*

Cyrillo has given the specific name *Ampelodesmos* to this plant on account of its being used for supporting vines, &c.

Sprengel considers it the Φλεώς, *Theoph. lib.* iv. *cap.* 11, which is described as, χρήσιμον πρὸς τὰ πλόκαμα. And to this I would refer the "Arundo Italiæ" of Pliny, of which he adds, "usus ad vineas maximè." Confer *Hist. Nat. lib.* xvi. *cap.* 36.

152. Triticum hybernum.—Winter Wheat, *Majorca*, or *Roccella*.

Πυροί. *Diosc. lib.* ii. *cap.* 107. One of the eight varieties of Wheat mentioned by Theophrastus, is πυρὸς Σικελός, which was heavier than those kinds which were imported into Greece, βαρύτερος δὲ τῶν εἰς τὴν 'Ελλάδα παραγινομενῶν ὁ Σικελός, *lib.* viii. *cap.* 4. It is not improbable that the variety called *Tumminia*, (*var.* spicis angustis et longis, aristis albis aut nigris,) by the Sicilians, may be identified with that, as its bearded long ears produce not only a greater number, but also larger and heavier, though coarser, grains, than the other kinds. The following are the Romaic names of *Wheat*, according to Dr. *Sibthorp*, στάρι, Athens and Constantinople; ασπροσιταρι, and πολίτις, Zante; διμηνιὸ, κοκκινίσιτι, βλακοστάρι, μονολόγι, Lebadea.

Wheat is said to have grown naturally wild in many places in Sicily; and Diodorus (*Sic. Bib. Hist. lib.* v. *cap.* 2,) states in particular the Leontine plain, now *Lentini*, as being its original habitat, ἔν τε γὰρ τῳ Λεοντινῷ πεδίῳ, καὶ κατὰ πολλοὺς ἄλλους τόπους τῆς Σικελίας μέχρι τοῦ νῦν φύεσθαι τοὺς ἀγριούς ὀνομαζουμένους πύρους. Cicero likewise observes, "caput est rei frumentariæ, campus Leontinus." On most of the ancient Sicilian coins appear some ears of bearded wheat; and on two of the Leontine brass coins, are figures of Ceres in addition to the usual ears of corn. Homer says that wheat, barley, and the vine grew spontaneously in the island, *Odyss.* ix. *v.* 109.

"Αλλα τάγ' ἄσπαρτα· καὶ ἀνήροτα παντα φύονται,
Πυροὶ καὶ κριθαὶ, ἠδ' ἄμπελοι, αἵτε φέρουσιν
"Οινον ἐριστάφυλον, καὶ σφιν Διὸς ὄμβρος ἀέξει

Cicero in another passage (*in Verrem lib.* v. *cap.* 38), calls Sicily "Insula Cereris———ubi primum fruges inventæ esse dicuntur."

That fertile country has, from the earliest period, been celebrated for its corn, and was accounted the granary of ancient Rome. Wheat is taken to certain places, named *Caricatorj*, and warehoused in pits ready for exportation.

The principal Caricatorj are Sciacca, Girgenti, Alicata, and Termini.

153. Secale cereale.—Manured Rye.

Stackhouse refers the Βρόμος, *Theoph. lib.* viii. *cap.* 4, to this plant. But, according to *Sibthorp*, the Oat (*Avena sativa*) is now called at Athens Βρίζα, and Βρῶμι. This last name would induce me to think that the Βρῶμος, *Diosc. lib.* ii. *cap.* 116, and the Βρόμος, *Theoph. lib.* viii. *cap.* 4, might more justly be identified with the Oat, than with the Rye; for it may with some certainty be supposed that the ancient Greeks were acquainted with the former plant, if, according to *Bruce*, Abyssinia was the native country of the oat. (*Head's Life of Bruce.*)

Rye, *il irmanu*, is commonly cultivated on Etna.

154. Hordeum vulgare.—Common Barley.

Κριθή. *Diosc. lib.* ii. *cap.* 108, also of *Theoph. lib.* viii. *cap.* 4. At Athens it retains nearly its old name Κρίθι, *Sibth.*, in Sicilian *L'orzu.*

155. Saccharum officinarum.—Common Sugar-Cane.

The Sugar Cane, *La Cannamele*, having been introduced from Africa, was some years ago much cultivated in the neighbourhood of Syracuse, and at the town of Meletti; but of late it has been abandoned on account of the trade with Brazil.

Strabo is the first among ancient authors, who has made mention of Sugar, *Vide Geogr. lib.* xi. Σάκχαρον, *Diosc. lib.* ii. cap. 104, where, says he, it is to be found in reeds, ἐυρισκόμενον ἐπὶ τῶν καλαμων, in India and Arabia Felix. Lucan doubtless signifies it in this verse, *Pharsal. lib.* iii. *v.* 237,

> "Quique bibunt tenerâ dulces ab arundine succos."

Saccaron, Pliny *Hist. Nat. lib.* xii. *cap.* 8. Galen, likewise speaks of Sugar, *de Simp. facult. lib.* vii.

156. S. Ravennæ.—Ravenna Sugar-Cane.—*Fl. Græc. vol.* i. *tab.* 52.

In the Flora Græca the κάλαμος συριγγίας, *Diosc. lib.* i. *cap.* 115, is referred to this species. With this agrees the καλαμος ἀυλητικος, *Theoph. lib.* iv. *cap.* 12; and that third kind of Arundo, concerning which Pliny writes,—Tertia Arundo est tibialis calami, quem *Auleticon* dicebant. (*Lib.* xvi. *cap.* 36.) Theophrastus has given a good description of the manner of making pipes, and observes that the most esteemed reeds grew near the river Cephisus. Its Romaic name is Σαμάκι. *Sibth.* We may suppose that the Σύριγγα καλὰν ἐννεάφωνον described by Theocritus, *Idyl.* viii. *v.* 18—24, was formed of this cane. So also the καλάμας αὐλὸν, *Theoc. Idyl.* v. *v.* 7. Confer Moschus, *Idyl.* iii. *v.* 53. And of such is the "Calamus agrestis" of Virgil; and Ovid's "dispar septenis Fistula cannis."

The common pipe of the Sicilian shepherds, which is to this day cut after the antique shape, is I believe mostly made of the *Arundo Donax;* sometimes however, this cane may be used. The word *Canna* is promiscuously given to every sort of reed in Sicily.

157. Oryza sativa.—Common Rice.

Ορυζα, *Diosc. lib.* ii. *cap.* 117. Ορυζον, *Theoph. lib.* iv. *cap.* 5. Water being so necessary to the growth of this plant,—ζῶν τὸν πολὺν χρόνον ἐν ὕδατι, and putrifying with the intense heat of a burning sun, the country soon becomes unwholesome, and abounds with mal' aria, wherever it is cultivated. The only Rice-grounds I saw were between the river Platani and Sciacca. But my guide informed me that they are very extensive near Lentini.

Its Sicilian name is *Il Risu.*

158. Zea Mays.—Indian Corn, or Maize.

Cultivated, and called in Sicily, *Il Granu d'India, o il granu Turcu, o Gran Turcu;* and at Athens, Αραβοσιτι (Arabian Corn) according to *Sibthorp;* but Forskal says, it is named along the Dardanelles, *reed-wheat,* καλαμασίταρο. The ears of this corn when half-ripe, are roasted and eaten by the common people in Sicily. At Naples also, it is a favourite food with the Lazzaroni, who roast and sell it in the streets. It is a most ancient dish, and is mentioned in the Bible at 2 *Sam. chap.* xvii. *v.* 28, "wheat and barley, and flour and *parched corn.*" And again at Ruth, *chap.* ii. *v.* 14. Boaz reached Ruth "*parched corn* and she did eat."

For a similar custom consult supra No. 36.

With the flour of the Indian corn, is made the real Italian *Polenta.*

159. Lygeum Spartum.—Rush-leaved Lygeum.

Ανόσπαρτον, *Theoph. lib.* i. *cap.* 8, apud *Stackhousium.* Hab. in sterilibus et montosis, propè Agrigentum.

CYPERACEÆ.

160. Cyperus Papyrus, *Pers.* (Papyrus Antiquorum, *Spreng.*)—Ancient Papyrus, or Paper Reed.

Παπυρος, or Papyrus, from which Paper is made, ἀφ' ἧς ὁ χάρτης κατασκευαζεται. *Diosc. lib.* i. *cap.* 116. For an excellent description of the πάπυρος, confer *Theoph. lib.* iv. *cap.* 9. Βύβλος, *Herodoti Euterp. cap.* 92. Βιβλος, *Strabo, lib.* xvii. Lucan also calls it *Biblus, Pharsal. lib.* iii. *v.* 222. Papyrus, *Plin. Hist. Nat. lib.* xiii. *cap.* 11.

The Papyrus, as Dioscorides observes, was known to every one,—*γνώριμος ἐστι πᾶσιν*, and was one of the most useful of all plants. The different purposes to which it was applied by the ancients, in addition to the making of Paper, are these; in medicine, for the cure of fistulæ and ulcers; for food to the natives, who chewed it either raw, or boiled, or roasted, for the sake of its sweet juice; for torches and candles: boats, sails, mats, garments, coverlets, and ropes were formed of it; and the roots were used as fuel, and for making cups, and other utensils.

From this verse of Lucan,—*Phar. lib.* iv. *v.* 136,

> "Conseritur bibulâ Memphitis *Cymba* Papyro,"

we may conclude that the ark in which the infant Moses was laid in the Nile, "an ark of *Bulrushes*, daubed with slime, and with pitch,"—(*Exod. chap.* ii. *v.* 3,) was a small boat, constructed with Papyrus, the common reed, bulrush, or rush of the Nile. On which Scheuchzer, in *Phys. Sac. vol.* i. *p.* 115, writes,—En! trimestrem infantulum, nondum Mosem, primum et nascentis mundi historicum, natantem inter Papyros, et forte singulari fato, expositum in Arculâ ex Papyro facta. It is also supposed to signify the *Rush* mentioned by *Job, chap.* viii. *v.* 11. Bruce relates, that in Abyssinia boats are still made of this plant.—"On vessels made of the Papyrus," (by the author,) see *Loudon's Mag. of Nat. Hist. vol.* ii. *p.* 324—332, and *figs.* 88, 89, 90, 91, 92. And, on the Bagdad *reed*-boats, with *tab. p.* 54, confer *Mignan's Travels in Chaldea*, &c., where the form of the vessel there given, exactly corresponds with that ancient one, figured *No.* 92, *p.* 329, in *Loudon's Magazine*. See also *fig.* 6, *tab.* 22, of the plates to *Hamilton's Ægyptiaca*.

The Papyrus was indigenous, according to ancient authors, in Syria and Egypt, particularly on the banks of the Nile, where Cassiodorus (*lib.* xi. 38.) thus describes its appearance,—Surgit Nilotica sylva sine ramis, nemus sine frondibus, aquarum seges, paludûm pulchra cæsaries.—Ovid applies the epithet *Papyrifer* to the Nile. But Strabo relates, that it is only found in Egypt and India; he says of it,—Ἡ μὲν Βίβλος ψιλὴ ῥάβδος ἔστιν ἐπ' ἄκρῳ ἔχουσα χάιτην. The head of the Papyrus, resembling a Thyrsus of many grassy filaments, which Strabo names χάιτη, and Theophrastus, κομη,—*coma*, a panicle, or head, was used to crown the statues of the gods, and to adorn the temples in Egypt. Hence Athenæus has,—βίβλος στεφανωτρίς.—(*Deipn. lib.* xv. *cap.* 18.) The Egyptian priests likewise wore shoes made of it: and the plant is of frequent occurrence in the ancient Hieroglyphics.

I am not aware that the Sicilian Papyrus is mentioned in any old classical author. *Domenico Cyrillo* has described it in a beautiful Monograph, published at Parma, anno 1796, and illustrated with two large and accurate engravings. On the authority of Linnæus and Persoon, it is also found in

Calabria. It has long been naturalized, and flourishes in abundance, on the banks of the small river, which rises in the clear and limpid fountain of Cyane, now *Ciane*, or *La Pisma*, and joins the Anapus, *Anapu*, a little before it flows into the Great Port to the S. W. of Syracuse. To this spot the Papyrus, *il Papéru*, or more vulgarly, *Pampéru*, or *Pappéru*, in all probability, was originally introduced either from Egypt or Carthage. It is not seen growing spontaneously in any other river in Sicily. But Fazelli asserts (*de Reb. Sic. Decad.* i. *lib.* 8.) that near the city of Palermo, there was formerly a marshy place called *Papyretum*, from the abundance of this plant. I measured one of the largest heads which I gathered in *La Pisma*, May 31, 1826, and found it 19½ inches in length; and the number of its umbellulæ were 397. It grows to the height of 22 or 25 feet. Paper is sometimes prepared from it, merely as a curiosity, and sold at Syracuse. I will now conclude these few notes on the plant, which has afforded to mankind such benefits, and which has more than any other contributed to the recollection of it, to science, to literature, and to the knowledge of past events,—in the following words of the ancient Naturalist,—cum Chartæ usû maximè Humanitas vitæ constet et Memoria.

JOHN HOGG.

ST. PETER'S COLLEGE, CAMBRIDGE,
March 21, 1828.

TABLE OF THE CLASSICAL PLANTS OF SICILY, MENTIONED IN THE FOREGOING LIST.

CLASS I. DICOTYLEDONES.

Ranunculaceæ.

1. Atragene cirrhosa
2. Anemone coronaria
3. A. hortensis
4. Ranunculus muricatus
5. Delphinium peregrinum
6. D. Staphysagria
7. D. pubescens.

Papavaraceæ.

8. Hypecoum procumbens.

Cruciferæ.

9. Brassica Cretica.

Capparideæ.

10. Capparis spinosa.

Cistineæ.

11. Cistus salvifolius
12. C. incanus.

Malvaceæ.

13. Althæa cannabina.

Aurantiaceæ.

14. Citrus medica
15. C. Aurantium.

Acerineæ.

16. Acer Creticum.

Ampelideæ.

17. Vitis vinifera
18. V.——*Var.* β. sylvestris.

Zygophylleæ.

19. Tribulus terrestris.

Rhamneæ.

20. Rhamnus Alaternus
21. R. Lotus
22. R. Zizyphus
23. R. Paliurus.

Terebinthaceæ.

24. Pistacia vera
25. P. Lentiscus
26. Rhus Coriaria
27. R. Cotinus
28. Juglans regia.

Leguminosæ.

29. Anagyris fœtida
30. Spartium villosum
31. Cytisus Laburnum
32. Medicago arborea
33. Melilotus Messanensis
34. Glycyrrhiza echinata
35. Biserrula Pelecinus
36. Cicer arietinum
37. Ervum Lens
38. Ochrus pallida
39. Lathyrus sativus
40. Ceratonia Siliqua
41. Cercis Siliquastrum.

Rosaceæ.

42. Amygdalus Persica
43. A. communis
44. Poterium spinosum
45. Rosa Gallica
46. Cratægus Azarolus
47. Aronia rotundifolia
48. Cydonia vulgaris.

Myrtaceæ.

49. Myrtus communis
50. Punica Granatum.

Cucurbitaceæ.

51. Momordica Elaterium
52. Cucurbita Pepo
53. C. Citrullus
54. Cucumis sativus.

Portulaceæ.

55. Tamarix Gallica.

Cacti.

56. Cactus Opuntia.

Araliaceæ.

57. Hedera chrysocarpum.

Umbelliferæ.

58. Echinophora tenuifolia
59. Bupleurum fruticosum
60. Seseli tortuosum
61. Cachrys Sicula
62. Selinum sylvestre
63. Heracleum Panaces
64. Ferula Ferulago
65. Thapsia Garganica.

Compositæ.

66. Scolymus Hispanicus
67. Apargia tuberosa
68. Artemisia Pontica
69. Chrysanthemum coronarium
70. Santolina rosmarinifolia
71. Atractylis gummifera
72. Carlina corymbosa
73. Centaurea Centaurium
74. Carthamus cæruleus
75. Onopordum Illyricum.

Ericeæ.

76. Erica arborea.

Oleineæ.

77. Olea Europæa
78. O.——*Var.* β. sylvestris
79. Phillyrea latifolia
80. Ornus Europæa.

Apocyneæ.

81. Nerium Oleander.

Boragineæ.

82. Heliotropium Europæum
83. Anchusa tinctoria
84. A. Italica
85. Cerinthe aspera.

Solaneæ.

86. Verbascum sinuatum
87. Hyoscyamus aureus
88. H. albus
89. Atropa Mandragora
90. Physalis somnifera
91. P. Alkekengi
92. Lycium Europæum
93. Solanum Sodomæum.

Labiatæ.

94. Rosmarinus officinalis
95. Salvia officinalis
96. Ajuga Iva
97. Teucrium Polium
98. Satureja capitata
99. Lavandula Stæchas
100. Origanum Onites.

Pedalinæ.

101. Sesamum Indicum.

Verbenaceæ.

102. Vitex Agnus Castus.

Acanthaceæ.

103. Acanthus mollis
104. A. spinosus.

Primulaceæ.

105. Cyclamen hederæfolium.

Plumbagineæ.

106. Statice sinuata.

Chenopodeæ.

107. Atriplex Halimus.

Polygoneæ.

108. Rumex bucephalophorus.

Laurineæ.

109. Laurus nobilis.

Thymeleæ.

110. Daphne Gnidium.

Aristolochiæ.

111. Aristolochia longa
112. A. rotunda.

Cytineæ.

113. Cytinus Hypocistis.

Euphorbiaceæ.

114. Ricinus communis
115. Euphorbia dendroides
116. E. Chamæsyce
117. E. Myrsinites.

Urticeæ.

118. Ficus Carica

but less so than the stem. *Flowers* collected into short, pedunculated, axillary clusters, which spread round the stem, forming *whorls* of which the uppermost are so close, as to constitute an uninterrupted spike. *Bracteas* filiform, pubescent, nearly the length of the calyx, one or two to each flower. *Calyx* 5-cleft, 10-angled, thickly covered with long, white, somewhat viscid pubescence. *Corolla* 2-lipped; *upper lip* entire, shorter than the stamens, obtuse, white; *under one* large, 3-cleft, lateral divisions obtuse, reflexed, the middle one orbicular, 2-lobed with the sides bent downwards: *throat* hairy, spotted with purple and marked with a streak of the same down the middle. *Stamens* ascending, hairy. *Anthers* deep purple, opening transversely, the longer ones 1-celled, the shorter ones 2-celled; the cells transverse. *Stigma* 2-cleft, with divaricated segments. *Seeds* 4, naked, polished, black.

Like the *A. ovata* (already figured in the first series of this work, *v.* ii. *p.* 358. *t.* 19), this is extensively dispersed over India, flowering at the same season, namely during the cool months. Both species yield the same heavy, disagreeable smell so striking in the *Stachys sylvatica* of Europe.

The name in Tamul, *Paymerutti*, signifies "*cheat the devil*," because patients suffering under ague, are made to inhale the vapour arising from an infusion of this plant. Copious perspiration ensues, which is kept up for some time by drinking more of the infusion: and this, it is said, soon cures the fever.

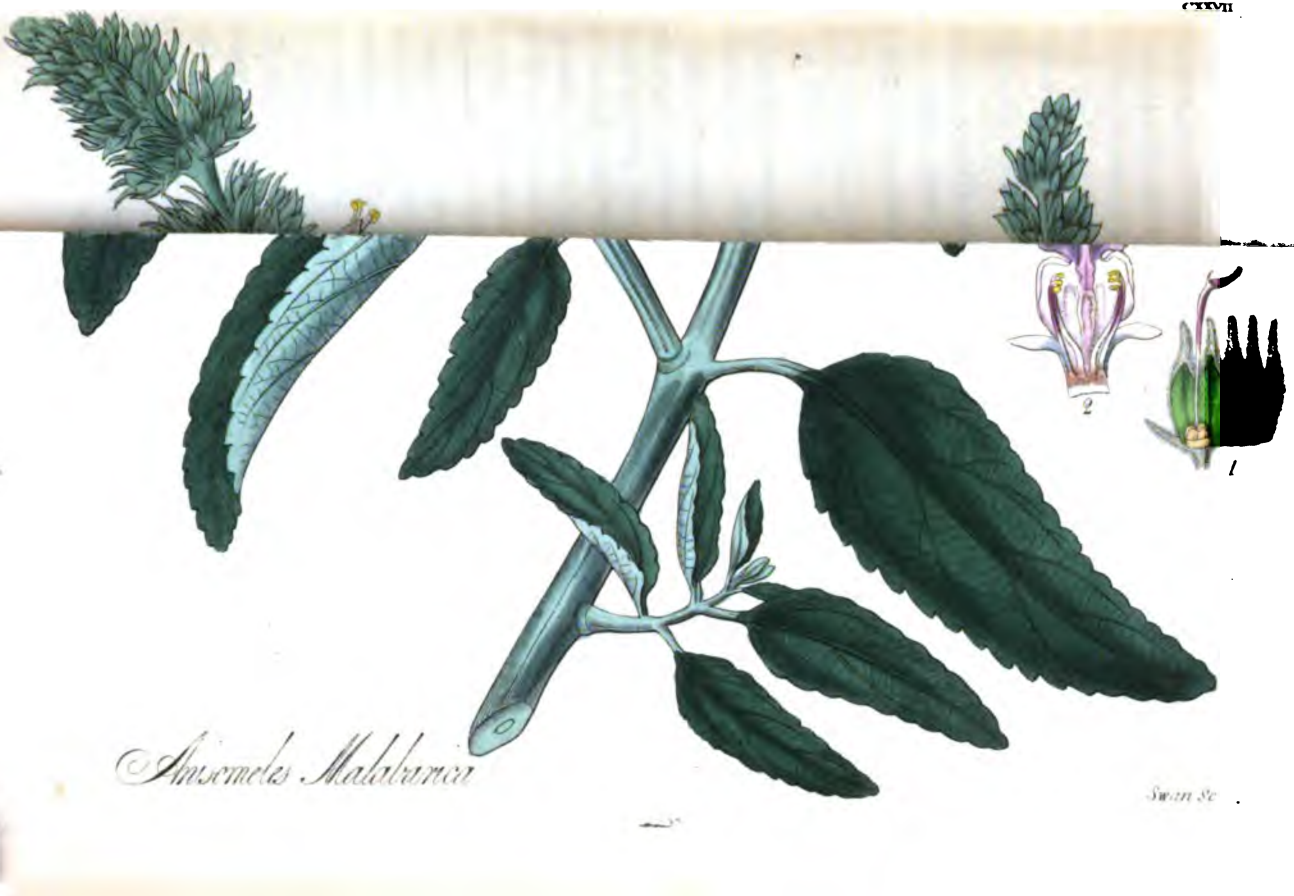
TAB. CXXVII. *Fig.* 1, Calyx (laid open) and Pistil. *f.* 2, Corolla laid open; slightly *magnified.*

ALLMANIA NODIFLORA.

PENTANDRIA MONOGYNIA. Nat. Ord. AMARANTHACEÆ, *Juss.*

GEN. CHAR. *Flores* omnes evoluti bisexuales. *Perianthium* 5-partitum. *Stamina* 5: *filamenta* simplicia, basi in cupulam edentulam coalita, nullis sterilibus interjectis: *Antheræ* biloculares. *Stylus* simplex: *Stigma* capitatum, bilobum. *Utri-*

CXXVII



Anisomeles Malabarica

Swan Sc

culus monospermus. *Semen* basi arillatum.——Folia *alterna.* Flores *sæpius in capitula congesti.* Genus vix et ne vix a *Chamissoa* distinguendum.

Allmania *nodiflora;* annua, diffusa, glauco-pubescens, foliis cuneato-obovatis acutis vel mucronatis, florum capitulis globosis pedunculatis oppositifoliis, bracteolis perianthium subæquantibus, stigmate brevi didymo. (TAB. CXXVIII.)

Allmania nodiflora. *Brown in Wall. List, n.* 6890.

Celosia nodiflora. *Linn. Sp. Pl. p.* 298. *Willd. Sp. Pl. v.* i. *p.* 1202. *Spr. Syst. Veg. v.* i. *p.* 814.

Celosia dichotoma. *Roth, Nov. Sp. p.* 172. (ex *Spreng.*)

Achyranthes nodiflora. *Roxb. Fl. Ind. v.* i. *p.* 678; (*ed. Cary, et Wall.*) *v.* 2. *p.* 505.

Chamissoa nodiflora. *Mart. in Nov. Act. Acad. Nat.*

Pee-Coipa. *Rheed. Hort. Mal. v.* x. *t.* 67. (*pessime*).

An herbaceous annual. *Root* long, fusiform. *Stems* procumbent, diffuse, terete, often much branched, pubescent or more or less hairy. *Leaves* alternate, varying from narrow to broadly obovate, cuneate and attenuated at the base into a petiole, mucronate or acute, more or less closely covered with a glaucous pubescence; margin flattish, reddish, which colour sometimes extends over the whole leaf. *Peduncles* opposite to a leaf, usually very short, sometimes half an inch long or even more towards the ends of the branches. *Flowers* capitate, three together on each pedicel, the middle one opening first. *Bracteoles* 3 on each pedicel, lanceolate, subulate, with a scabrous line along their back. *Perianth* 5-partite; divisions (or sepals) lanceolate, nearly glabrous or slightly scabrous along the back, equal. *Stamens* 5; *filaments* united at the base into a short membranaceous cup, all fertile, without any intermediate sterile ones: *anthers* ovate, 2-celled. *Ovary* superior, 1-celled, 1-ovuled: *ovule* inserted at the base. *Style* filiform, as long as the stamens. *Stigma* capitate, reddish, slightly cleft, each lobe being nearly globose and very small. *Capsule* (*utriculus*) membranaceous, opening transversely. *Seed* solitary, lenticular, of a clear shining black colour, with a white membranaceous or almost sebaceous arillus at the base.

This is to be met with in dry sandy soil in every part of the Carnatic, most frequently in corn-fields. It is a polymorphous species. Mr. Brown has not, so far as we know, published a generic character, nor perhaps is it really distinct from *Chamissoa:* the only difference, that we can perceive, lies in the stigma, which is almost entire in *Allmania*, and cleft with two longish recurved segments in *Chamissoa*. *W. & A.*

TAB. CXXVIII. *Fig.* 1, Flower. *f.* 2, the same laid open. *f.* 3. 4, Capsule with its lid. *f.* 5, Seed, *magnified.*

CELSIA VISCOSA.

DIDYNAMIA ANGIOSPERMIA. Nat. Ord. "VERBASCINEÆ," *Nees in Litt.*

GEN. CHAR. *Cal.* 5-partitus. *Cor.* rotata, patens, 5-loba, inæqualis. *Filamenta* villosa. *Stigma* 1. *Capsula* bivalvis. —Herbæ. Folia *simplicia aut pinnata.* Flores *laxe spicati* (*v. racemosi*), *terminales, singuli unibracteati aut foliolo axillares.* Celsiæ Creticæ *filamenta* 2 *glabra.*

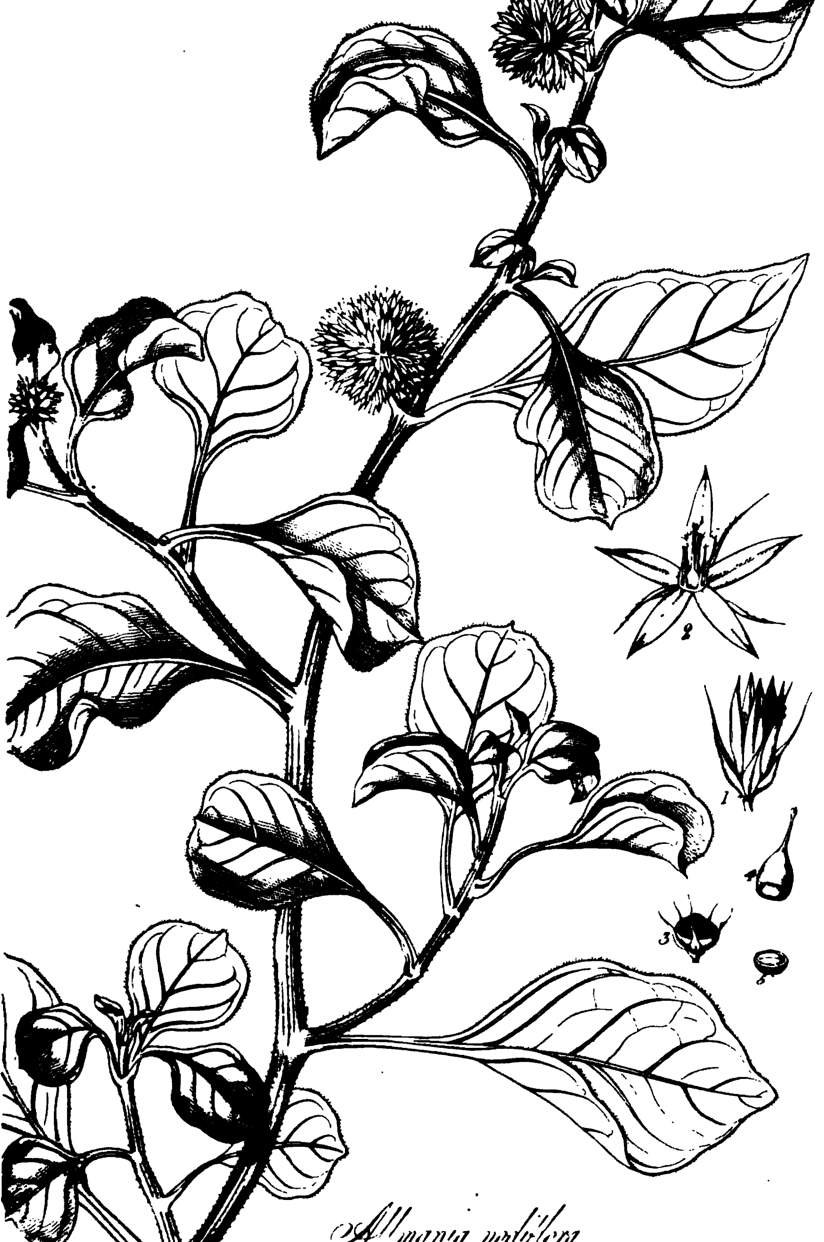
Celsia *viscosa;* viscoso-pubescens, foliis caulinis inferioribus lyratis, floralibus cordatis semi-amplexicaulibus, pedunculis flori longitudine æqualibus. *Nees MSS.* (TAB. CXXIX.)

Celsia viscosa. *Roth, Cat. Bot. Fasc.* ii. *p.* 69. *n.* 4. *Fasc.* iii. *p.* 50. *Link, Enum. v.* ii. *p.* 146. *n.* 1653. *Spr. Syst. Veget. v.* ii. *p.* 809.

Celsia Coromandeliana. *Vahl, Symb. p.* 79 (*diagn.*) *Willd. Sp. Pl. v.* 3. *p.* 280 (*diagn.*) *Wall. Cat. n.* 2631.

Root fusiform. *Stems* herbaceous, erect, rounded, branched, tomentose, slightly angled. Radical *leaves* petiolate, lyrato-pinnatifid, wrinkled, crenato-serrate, villous above, the hairs when viewed with a lens, exhibiting numerous, shining, viscid

CXXVIII.

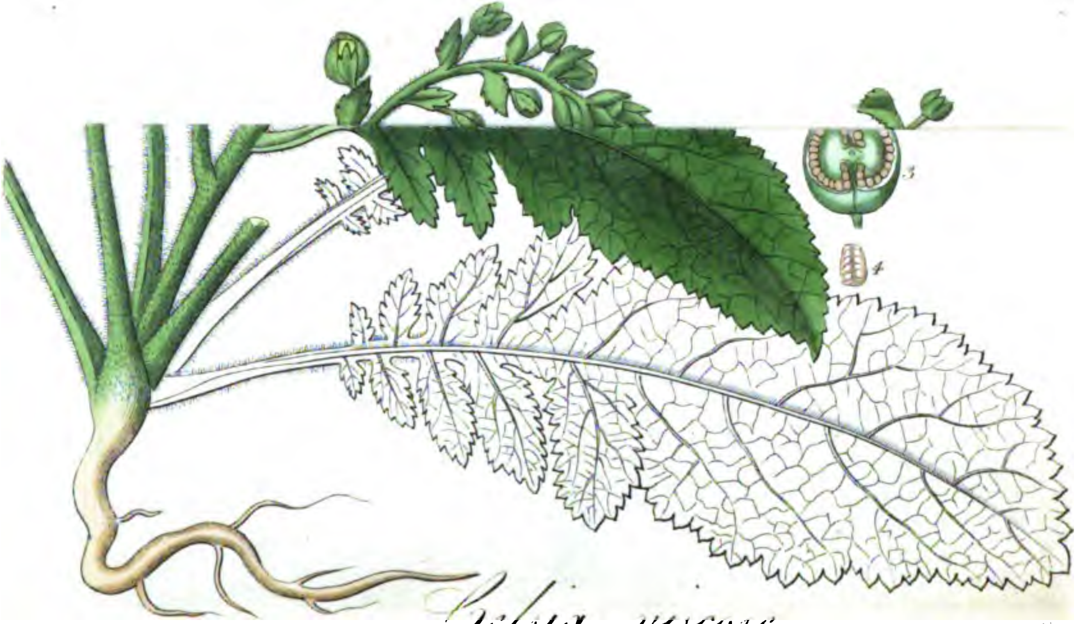


Allmania nodiflora

W I E del.

Swan Sc.

TAB. CXXIX.



Celsia viscosa

points, but so small that they scarcely communicate a sensible viscidity to the touch; beneath, the veins are softly pubescent:—cauline *leaves* sessile, cordate, waved, embracing the stem. *Racemes* terminal. *Pedicels* spreading, a little longer than the sessile, lanceolate, acutely dentate bracteas, which embrace their base. *Calyx* 5-partite, persistent, viscid, pubescent, dentate on the edges, obtuse. *Corolla* yellow, rotate; the segments orbicular. *Stamens* didynamous, attached to the base of the corolla. *Filaments* very hairy, the shorter pair incurved: *Anthers* reniform, 1-celled, opening along the convex edge. *Pistil*: *Germen* superior: *Style* filiform: *Stigma* capitate, hairy. *Capsule* 2-celled: *receptacle* in each cell reniform, large, fixed to the partition and covered on all sides with numerous small rough *seeds*.

This plant is frequent in moist sandy soils on the banks of rivers, and flowers during the greater part of the cool and rainy seasons. I at first referred it to the *C. Cretica;* but this it cannot be, judging from the character, nor yet the *Arcturus* to which Sprengel refers the *Coromandeliana* of Vahl, and to which it has a closer affinity. My specimens of the *Arcturus* (so named by König) are perfectly glabrous, the radical leaves laxly lyrato-pinnate, the leaflets varying in form from obovate to linear-lanceolate, which is also the case with the lower leaves of the stem: above, the leaves are oblong-lanceolate, acute, finely serrato-dentate:—the peduncles are about twice the length of the bracteas and the segments of the calyx are entire. *W. & A.*

TAB. CXXIX. Fig 1, Calyx laid open, showing the pistil. *f.* 2, Corolla laid open. *f.* 3, Section of the germen. *f.* 4, Seed, *magnified.*

STREPTIUM ASPERUM.

DIDYNAMIA ANGIOSPERMIA. Nat. Ord. VERBENACEÆ, *Juss.*

Calyx 5-dentatus, demum inflatus persistens fructumque includens. *Corolla* hypocrateriformis: tubo gracili, elongato, paullulum curvato, apicem versus contorto: limbo 5-partito, subæquali. *Stamina* 4, didynama: *antheræ* subrotundæ, biloculares. *Nux* medio intus cava et vacua, bipartibilis: valvis dorso gibbis, echinatis, 2-locularibus, 2-spermis. *Semina* erecta, curvata. *Albumen* nullum. *Radicula* infera.—Suffrutex. Folia *opposita, cordata, serrata.* Racemi *terminales, vel ex axillis superioribus.* Flores *parvi, albi, unibracteati.*

Streptium *asperum.* (TAB. CXXX.) *Roxb. Corom. Pl.* ii. *t.* 146; *Fl. Ind.* ii. *p.* 90. *Spr. Syst. Veg. v.* ii. *p.* 754. *Wall. List, n.* 2657.

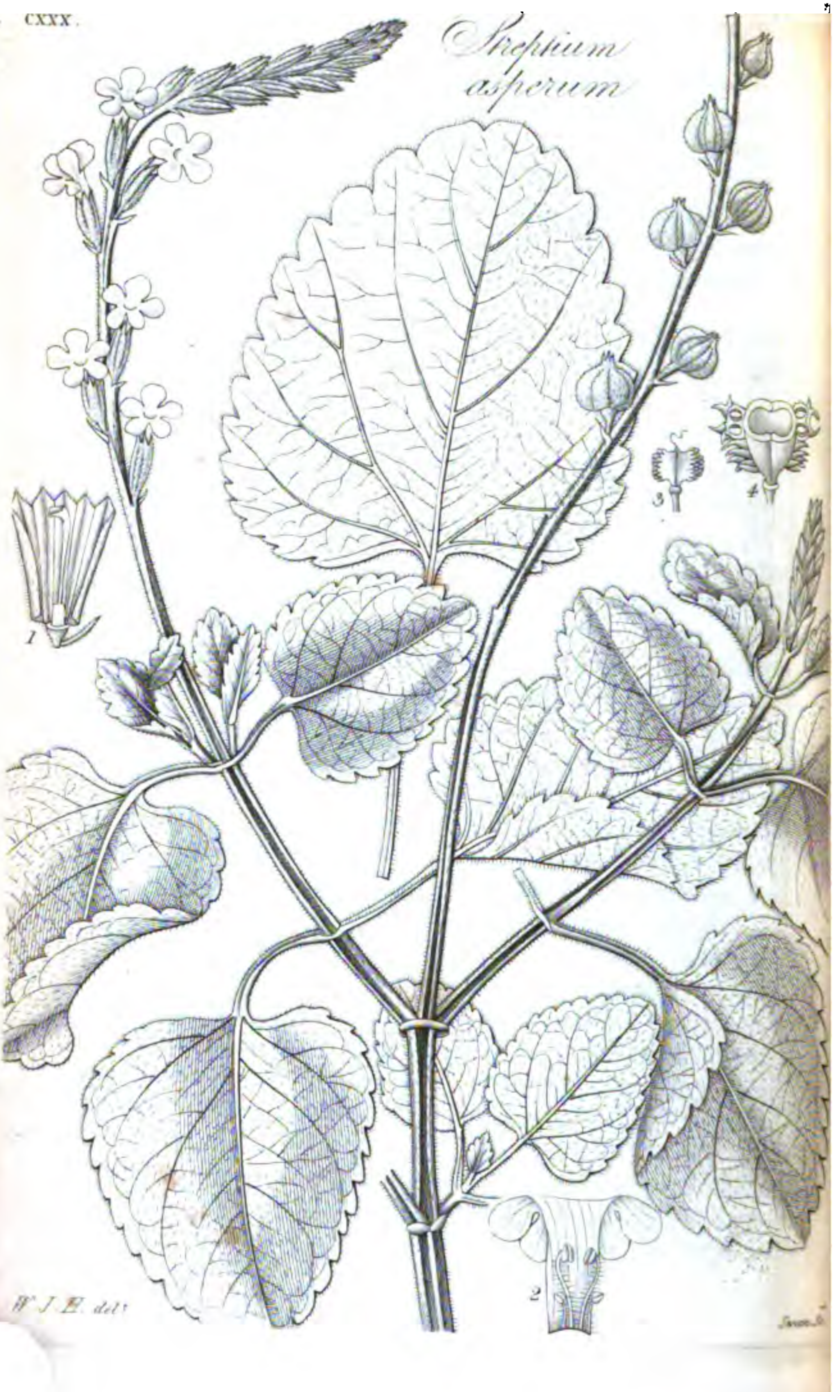
Tortula aspera. *Willd. Sp. Pl. v.* iii. *p.* 359.

Priva leptostachya. *Pers. Syn. Pl. v.* ii. *p.* 139.

Verbena Forskalii. *Vahl, Symb. v.* iii. *p.* 6?

Perennial, two to four feet high. *Stem* short, woody. *Branches* longish, four-sided, opposite, harshly pubescent. *Leaves* opposite, on longish petioles, broadly cordate, blunt with coarse bluntish serratures, harshly strigose with short straight or hooked hairs. *Racemes* terminal, or from the forkings of the upper branches, long, hispid. *Flowers* numerous, very shortly pedicelled, at length remote at the base of the raceme, on account of its elongating. *Bractea* solitary to each flower. *Calyx* tubular, and somewhat gibbous, 5-angled, 5-toothed, clothed with short rigid hooked hairs, after flowering inflated, dry, persistent and enclosing the fruit. *Corolla* white, hypocrateriform: *tube* cylindrical, longer than the calyx, slightly curved, twisted near the summit; *limb* 5-partite, the segments equal, obovate. *Stamens* 4, inserted into about the middle of the tube of the corolla, two of them curved, and twice as long as the others: *filaments* hairy: *anthers* roundish-ovate, 2-celled, approximating in pairs. *Ovary* superior, 4-celled; *ovules* solitary in each cell, and attached to the base. *Style* filiform, curved and clavate at the apex. *Fruit* nut-like, entirely enclosed within the persistent calyx, obcordate, compressed, 2-valved, gibbous and furnished with numerous prickles at the back of

CXXX.



Strephium asperum

each valve, striated horizontally with nerves between the gibbous portions; the nerved portion, and almost the whole body of the nut, is hollow internally; the four cells with their solitary seeds being situated by pairs within the gibbous parts. *Seeds* erect, clavate, slightly curved. *Albumen* none. *Radicle* inferior.

In rubbish, near tanks under the shade of trees. I first met with this plant at Samulcottah, where Roxburgh also saw it; since, however, I have found it at Trevalore, near Tanjore, and a few other places; but it may be considered as rare: the specimens figured are from Trichinopoly. We have referred to Forskal's plant with doubt, for Vahl describes the stems as glabrous: perhaps it may form a distinct species. As a genus, *Streptium* is rather too closely allied to *Priva*. *W. & A.*

TAB. CXXX. Fig. 1, Calyx laid open, including the pistil. *f.* 2, Corolla laid open. *f.* 3, Fruit, *f.* 4, section of do. *magnified.*

[TAB. CXXXI. CXXXII.]

PLANTÆ JAMESONIANÆ. COLUMBIAN PLANTS

COLLECTED BY PROFESSOR WILLIAM JAMESON OF QUITO.

1. Lobelia *pulverulenta;* fruticosa, foliis ellipticis brevissime petiolatis crenato-serratis supra rugosis glabris subtus albo-tomentosis, pedunculis axillaribus solitariis unifloris superne arcuatis, calycis segmentis lanceolatis serratis, corollis sub-campanulatis. (TAB. CXXXI.)

Lobelia pulverulenta. *Pers. Syn. Pl. v.* i. *p.* 40. *Schultes, Syst. Veget. v.* v. *p.* 40. *Spreng. Syst. Veget. v.* 1. *p.* 702.

L. campanulata. *Cav. Ic. v.* vi. *p.* 11. (*non Lam.*)

Hab. Valley of Barros, Columbia: elev. 6000 feet above the level of the sea. *Prof. W. Jameson.*

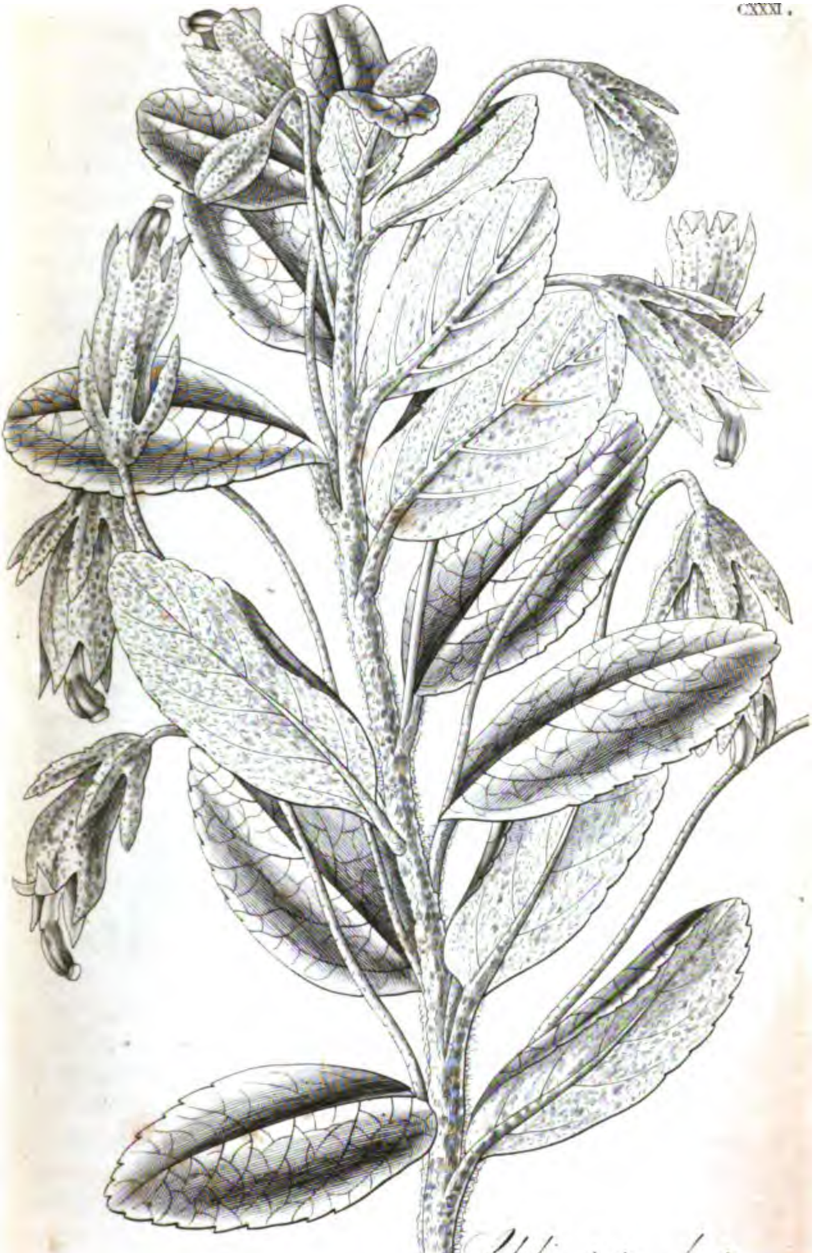
Caulis fruticosus, ramosus, ramis dense albo-tomentosis. *Folia* biuncialia, elliptica, coriacea, alterna, brevissime petiolata, crenato-serrata, supra rugosa nuda, subtus albo-tomentosa. *Pedunculi* erecti, solitarii, uniflori, folio longiores, infra calycem arcuati. *Calyx* tomentosus, segmentis lanceolatis subfoliaceis, grosse serratis, corollæ fere dimidio longitudinis. *Corolla* subcampanulata, pulverulento-tomentosa, quinquefida, laciniis subæqualibus, 2 superioribus brevioribus apicibus reflexis. *Stamina* exserta.

At the time I made the drawing of this well marked species of *Lobelia*, and sent it to the engraver, I was not aware of its being, as I now find that it is, very satisfactorily figured in Cavanilles' Icones: a work, however, of such rarity, that our readers will not be sorry to see it represented here. That author justly compares it with *L. Columneæ*, *Sm. Ic. t.* 22; but that species has much narrower leaves, and a very differently shaped corolla.

2. Urtica *nana;* annua, glabra, caulibus numerosis brevibus diffusis ramosis, foliis (parvis) oppositis cordato-ovatis brevissime petiolatis obtuse crenatis, floribus monoicis: *masc.* perianthio 4-lobo laciniis lato-ovatis, antheris sessilibus: *fœm.* perianthio 4-partito laciniis lanceolatis. (Tab. CXXXII.)

Hab. On rocks, Paramo of Antisana, Columbia, at an elevation of 12,000 feet above the level of the sea. *Prof. W. Jameson.*

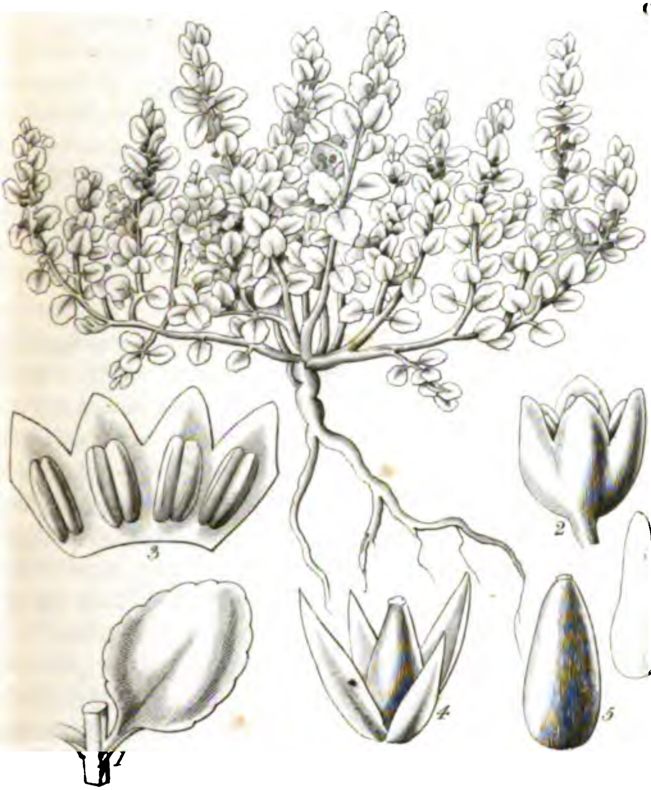
Radix annua, subfusiformis, ramosa. *Caules* numerosi, 2—3 uncias longi, diffusi, ramosi, ut et tota planta glabri, ramis erectis, foliosis. *Folia* parva, opposita, cordato-ovata, lævissima, nitidiuscula, subcoriacea, plana, obtusa, marginibus crenatis; petiolo brevissimo. *Flores* minuti, axillares, sessiles, monoici:—*Masc. Perianthium* 4-lobum, lobis erectis, brevibus. *Antheræ* oblongæ, sessiles, lobis oppositæ, infrà tubum insertæ. *Fœm. Perianthium* profunde 4-partitum, CXXXI.



W. J. H. del.

Lobelia pulverulenta

CXXXII.



Urtica nana

W J H del^t

laciniis subpatentibus, lanceolatis. *Ovarium* ovatum, attenuatum, glaberrimum: *stigma* sessile.

Fig. 1, Leaf. *f.* 2, Male flower. *f.* 3, the same laid open. *f.* 4, Female flower. *f.* 5, Seed removed from the achenium. *f.* 6, Embryo: *magnified.*

ON THE SUPPOSED ANIMAL NATURE OF THE SEEDS OF CERTAIN ALGÆ. BY THE REV. M. J. BERKELEY.

AN opinion has been all but established that the seeds of certain *Algæ*, when they separate from the parent plant, are endowed with real animal life; and that when this ceases they begin to vegetate, and are true members of the vegetable kingdom. The observations tending to establish this opinion have been made by persons of such authority, as to render it next to impossible to deny the reality of the phænomena which they describe. The most accurate and interesting are those of Franz Unger on the seeds of *Vaucheria clavata*, *in Act. Leop. v.* xiii. *P.* 2. *p.* 791. Indeed the facts seemed to have been so firmly established by him, that in the "*Gleanings of British Algæ*," I had endeavoured, on the presumption of their truth, to place the matter in a more philosophical point of view, as I conceived, than that in which it had been regarded on the continent. But some observations of Professor Burnett in his "*Outlines of Botany*," § 37, 38, on the motion of small particles in fluid, though scarcely bearing at all on the particular motion of the seeds in question, (a motion which at § 232, he seems almost inclined to consider as really animal, if, he says, "no fallacies vitiate the account given of it") at once convinced me that the opinion deduced from the phænomena of the animal nature of the seeds was erroneous, though almost unavoidable. The real case seems to be as follows. When the seed separates from the matrix upon the field of the microscope, it passes into the water in which the plant is immersed. Now if the contents of the seed, which are semi-fluid, are of a different specific gravity from that of water, a mutual action of exosmose and endosmose will immediately take place through the epidermis of the seed: the water will pass into the seed and part of the fluid matter of the seed will pass out into the water; and in consequence of this action, the current produced will cause the seed to move about, until an equilibrium take place, when the seeds will settle at the bottom and begin to vegetate. I have at present had no opportunity of establishing the truth of this surmise by experiment, as I have found the plant in only one spot. But by varying the density of the water by the addition of a weak solution of Gum Arabic, I think that there is little doubt that the seed, when the motion has just subsided and there has not been time to fix itself to the bottom of the glass by the sprouting roots, would again start into apparent life, and that the motion so excited would continue until an equilibrium was again established. The necessary experiments would require some care, but to a person accustomed to the use of the microscope, there would, I conceive, be no insurmountable difficulty. The above reasoning appears so conclusive, that even in the absence of actual experiment, most persons will, I think, be convinced that the puzzling phænomena can be best accounted for by Dutrochet's most important discoveries on the reciprocal motion of fluids through thin membranes.

NOTES ON AN EXCURSION UP THE WESTERN MOUNTAINS OF VAN DIEMAN'S LAND. BY. R. W. LAWRENCE, ESQ. OF FORMOSA.

(THE following notes of an excursion from Formosa, on Lake River, in Van Dieman's land, the residence of Mr. Lawrence, to the summit of the Western mountains, were kindly communicated to me by that gentleman, accompanied by an excellent collection of specimens of plants made during that journey, as well as in other parts of the Island. About the same time a valuable collection was also sent to me by Ronald Gunn, Esq. of Launceston, chiefly gathered in the neighbourhood of that town. A list of these, together with what I have received at other times from the same zealous botanist, and a few from Dr. Scott, will be described in the pages of this work; and one portion of them will follow immediately upon this Journal. As I have reason to believe that these gentlemen have distributed specimens to other botanists with similar numbers which accompanied mine, I have thought it better to give these numbers for their more conveniently determining the species. I may observe, that of Mr. Lawrence's numbers, 250, and the following numbers, are from the Western mountains; while of Mr. Gunn's collection, 259, 267 to 271, 273 to 286, 288 to 292, 295, 299, 300, 303 to 309, 312 to 322, 326, 337, 366 to 371, 411, and 443, are from the same range of mountains, but at a distance of forty miles from the part explored by Mr. Lawrence, and where the height is estimated at 4000 feet. These are the "Western mountains," running east and west, and said to be covered with snow for half the year, which lie S. W. from Launceston, in "Cross' Chart of Van Dieman's Land, 1829, and situated between lat. 41° 42° S. and long. 146° 147°," and they must not be confounded with another chain of mountains of this same map, in the south western part of the island, also called the "*Western mountains*," and seen from the Derwent river, from which they lie due west.—*Ed.*)

January 15, 1833. (Thermometer 67°.) None of the gentlemen who had engaged to accompany me on my expedition to the lakes and along the western range of mountains, having arrived, with the exception of Mr. Curson, we started with three men at about six o'clock A.M., carrying with us a week's stock of flour, tea and sugar, &c. But we had scarcely walked six miles before we discovered that we had forgotten our shot, the sending a man back for which detained us nearly three hours. During the time we were obliged to wait, the mountain tops became enveloped in clouds, and there was every appearance of approaching bad weather. At length we had a pretty heavy fall of rain, accompanied by a squall, and by the time the man had returned with the shot, all was clear again and promised favourably. On his return we proceeded onwards, and reached about half-way up the "Flat-topped mountain," where we halted for the night. Our tent was of the most portable description, consisting of two strong sheets, sewed together and stretched over such a frame as we could most conveniently construct, from sticks of the *Prostanthera lasiantha* and other shrubs. Nothing remarkable had occurred in the course of this day.

The base of this mountain, to one-third of its entire height, is composed of white sandstone (free-stone) of excellent quality for building; so that, though the prospect be far distant, we may hope, that at some future time, substantial stone dwellings will take the place of the miserable wooden fabrics that now form the town of Formosa. I had not much time to ramble here, though desirous of collecting some of the minerals that usually accompany this kind of rock, as my principal object was to attain great elevations and collect specimens of the plants peculiar to them. In the evening we kindled a very large fire, that our friends at home might observe the height to which we had ascended.

January 16. (Thermometer 60°, in the evening 50°; at

Formosa, 63°.) The rill from which we obtained water yielded some mosses, one of which I at first hoped would prove to be the rare *Dawsonia polytrichoides*, but on closer examination it turned out to be a species of the allied genus *Polytrichum*, and also an aquatic moss of peculiar aspect, which was unfortunately destitute of fructification. After collecting these, we continued our ascent, the way becoming more precipitous as we advanced. In the course of the day we arrived at the summit of the "Flat-topped mountain," climbing over places which I felt very uncomfortable at looking down upon, but which my lighter and more active companion scaled with the apparent ease of a kangaroo. During the morning we passed the usual mountain plants, and gathering specimens of all such as were either in fruit or flower; among these were *Drymophila cyanocarpa*, several species of *Pultenæa*, *Lomatia polymorpha*, and individuals of the genera *Leucopogon*, *Hakea*, *Orites*, &c.

Mr. Curson took two men to hunt, while I remained at a spot where we had fixed to encamp: after two hours, however, they returned empty-handed, while I had collected in the vicinity of the tent two species of *Richea*, an *Eucalyptus*, and several other plants. The country here presents a rugged and romantic appearance, consisting of small wet flats or plains, over which are scattered projecting columns of basalt, and hemisphærical masses of a kind of moss, resembling beautiful green velvet cushions, interspersed with fragments of rock, that bring to mind the appearance of ruined castles. After our tent was erected, we despatched two men again to hunt, but, a severe snow storm coming on, they returned unsuccessful. It was so cold that the men's kangaroo-skin caps and pouches were quite stiffened, and snow fell all night.

January 17. (Thermometer 42°, 54°, 60°; at Formosa, 67°, 70°.) The ground was covered to the depth of several inches with snow, but the sun, on its rising, gave promise of a fine day. After looking round and admiring for a short time the extensive panoramic scene beneath us, Mr. Curson and I started with two men to hunt. The circumstances of the dogs having lamed themselves in ascending the mountain, and the ground being very stony, again caused us a disappointment. We saw many kangaroos, both of the forest and brush kind, and observed excrements of the "Hyæna" (*Didelphis* or *Thylacius cyanocephalus*); but very few traces of quadrupeds, except these now named. There are but few birds, the most remarkable being one which, from its locality, I have been used to call the *Mountain Bird:* I am ignorant of its scientific name, but it seems to belong to the Order *Pici* of Blumenbach. This morning's collection of specimens and seeds was satisfactory; a *Richea*, a new and small *Pultenæa*, a trailing *Exocarpus* and a creeping aphyllous shrub being among the most remarkable. After resting a short time in the tent, we packed up and proceeded due south towards the lakes, the mountains running east and west: these, however, being purely basaltic, presented nothing to interest the mineralogist. After walking about three miles we saw a great number of kangaroos, and halted that we might take advantage of the evening and following morning to hunt them.

The country here is merely a repetition of small plains and low stony hills, the former bearing grass and alpine plants, but evidently subject to be flooded during the winter season, the water still standing in places, even at this time of the year. On the hills are several *Eucalypti*, of deformed aspect, from exposure to the winds which are both high and frequent. *Tasmannia fragrans*, several species of *Hakea* and *Orites* also occur. The hunters were again unsuccessful, though numbers of fine forest kangaroos* were seen. The dogs would not run, though half starved.

January 18. (Thermometer 55°, 70°; at Formosa, 68°, 76°.) Two of the men went out to hunt at day-break, one of whom returned to breakfast, the other had lost himself. After waiting for him several hours, we fired some shots, which had the effect of leading him to us, though without any game. We spent some time in arranging our specimens of plants, and then proceeded towards the lakes, the first and smallest of which we reached in about two hours. Here I found a *Veronica*, which I had never seen before, with deeply divided leaves. While walking through some underwood, a kangaroo started before us, which I succeeded in shooting. The next, or middle lake, was soon in sight. Here we heard the noise of dogs, which was attributed to a party of blacks hunting. While walking along a plain leading to lake Arthur, we discovered a herd of what we thought wild cattle, but, on shooting one of them, we found it to be branded with the letters J. J., and soon after we were surprised at seeing a flock of sheep. We arrived at the largest lake, called Lake Arthur, and in the evening shot one of the numerous ducks, which frequent it.

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* A large kind of kangaroo; not, however, I believe, the *Macropus giganteus*.

January 19. (Thermometer 53°, 80°; at Formosa, 63°, 70°.) This morning we took about 14lbs. of meat from the bullock we had killed; but while sitting down to breakfast upon the spoil, three men arrived, who turned out to be the overseer and stock-keepers belonging to a Mr. Jones of Jericho, the proprietor of the cattle and sheep we had seen, and who had settled in this neighbourhood only a week before. We were glad of this opportunity to explain what we had done, and found the overseer so civil that he even invited us to his hut. Here I saw *Bellendena montana* in flower, and an *Epacris* new to me. We remained near the lake all day, gathering several rare plants, and one in particular, belonging to the Order *Compositæ*, which I had never before seen.

The scenery about Arthur's Lakes is by no means so picturesque as it is generally reported to be, though it must be owned that the largest of the three is a fine sheet of water. The most easterly, or smallest lake, is but a mile long, surrounded by marshes, and the southwestern end is very reedy.

The middle lake is two or three miles long, but the only one worth seeing is the largest, which measures from twenty to thirty miles in circumference. Its eastern shore is shallow for a long way in, and somewhat resembles an open sea-shore, from the rocks being worn down by the waves, which, no doubt, roll very strong in windy weather, and from the collection of a sand bank inland.

January 20. (Thermometer 42°, 70°; at Formosa, 70°, 73°.) At about 11 o'clock, after having shifted and packed up our specimens, we made our way in a N. West direction, towards the peaks, two conical eminences, above 500 feet above the summit of the Flat-topped mountains. We collected seeds of the Cedar tree (*Eucalyptus* sp.) and shot two kangaroos in the course of the morning. A few uncommon plants also rewarded our researches. In the afternoon we reached the foot of the highest peak, and erected our tent near a plentiful supply of water. The wind blew cold from the eastward.

January 21. (Thermometer 42°, 60°, 44°; at Formosa, 68°.) Previously to ascending the peak, we arranged the specimens collected yesterday. In our ramble upon the peak, we found *Gualtheria hispida*, and a new plant, probably belonging to the Genus *Bæckea:* also a large quantity of *Lomatia polymorpha.* The wind was high, and the thermometer fell 10°. There is abundance of *Usnea sphacelata* here; and if what I have been used to call by this name is the true plant, its distribution is universal over this island, from the lowest to the highest altitudes I have visited. On approaching the summit we found it to be so very precipitous, and the wind so exceedingly high and cold, that I was myself unable to ascend further, though I made several attempts; Mr. Curson, however, and my gardener reached the top.

January 22. (Thermometer 41°; at Formosa, 68°.) A considerable fall of snow took place during the night. After packing our specimens, we prepared to descend. From the Flat-topped mountains we descried a gulley, which appeared to take the desired direction, and determined on following it to the bottom, where it seemed to constitute the creek which bounds the western side of Mr. J———'s estate, adjoining my father's upper sheep-walk. Here we found a hoary moss (*Trichostomum*), of which we collected many specimens, though not in fruit. A number of beautiful ravine-plants occurred as we proceeded downwards. The lower third of this mountain appears to be composed of free-stone, of which we passed several perpendicular and excavated rocks, (worn away probably by the action of the water) perhaps 100 feet high; we also saw fine specimens of *Prostanthera Lasianthus*.

From this spot we pushed on very hard to reach Formosa, if possible, that night. We arrived at the level ground, at the foot of the mountains, just as it was darkening, and reached home about 11 o'clock, after a walk of above thirty miles, over rugged country, and carrying a heavy burthen on our backs.

CONTRIBUTIONS TOWARDS A FLORA OF VAN DIEMAN'S LAND; FROM COLLECTIONS SENT BY R. W. LAWRENCE, AND RONALD GUNN, ESQRS., AND BY DR. SCOTT.

RANUNCULACEÆ. *Juss.*

1. Clematis *blanda*, *n. sp.*; dioica, pedunculis axillaribus solitariis unifloris, foliis ternatim biternatimve sectis nunc simplicibus, foliolis petiolulatis ovatis integerrimis glabris mucronatis trinerviis, sepalis 4 patentissimis oblongo-lanceolatis marginibus pubescentibus, antheris aristatis, floris fœminei filamentis paucis dilatatis sterilibus, aristis sericeis.

Dr. Scott, Mr. Lawrence, (*n.* 106, 1831.—*n.* 147.) *Mr. Gunn*, (*n.* 54.) "Common in shady places, climbing on the neighbouring shrubs with great elegance, yielding a delightful fragrance, and flowering in November.

2. C. *gentianoides;* erecta? dioica, pedunculis axillaribus solitariis unifloris, foliis indivisis ovato-seu-oblongo-lanceolatis integerrimis vel raro serratis trinerviis brevi-petiolatis, sepalis 4—5 oblongis marginibus pubescentibus.—*De Cand. Syst. Veget. v.* i. *p.* 159. *De Less. Ic. v.* i. *t.* 5. *De Cand. Prodr. v.* i. *p.* 8.

Mr. Lawrence, 1831. *Mr. Gunn,* (*n.* 53.)—Habit of *C. integrifolia,* L.; but the petals are far less coriaceous. De Lessert's figure represents the fructified state of the plant, and the leaves are shorter than in our specimens, which, moreover, are all male.

1. Ranunculus *cuneatus, n. sp.;* decumbens hispido-hirsutus, foliis omnibus longe petiolatis ovalibus raro trilobis grosse inciso-serratis basi cuneatis integerrimis, floribus (flavis) pedunculatis terminalibus axillaribusque minimis, petalis 4—5 vix calyce piloso longioribus, carpellis 6—8 orbicularibus compressis lævibus submarginatis stylo brevi reflexo terminatis.

Swamps. *Mr. Gunn,* (*n.* 228).—This is very distinct from any plant with which I am acquainted.

2. R. *inundatus. Br. in De Cand. Prodr. v.* i. *p.* 34. Salt-water swamps. *Mr. Gunn,* (*n.* 396.)—The petals of this species are narrow-oblong: the carpels subglobose, slightly compressed, a little wrinkled, with a reflexed style more than half the length of the carpels.

3. R. *nanus, n. sp.;* caule subunifloro perbrevi petiolisque basi dilatato-membranaceis subæqualibus patenti-pilosis, foliis glabriusculis trifidis segmentis acutis integerrimis vel incisis apicibus glandulosis, calycinis foliolis ovatis membranaceis glabris, petalis 5 flavis, carpellis 5—7 orbiculatis compressis stylo acuminato longiusculo apice recurvato terminatis.

Mr. Lawrence (*n.* 324.)—Whole plant from 1 to 2 inches high, with one or two linear and nearly entire leaves on the stem, and one or two rather large, bright yellow flowers. There is a very conspicuous gland at the apex of each lobe or division of the leaf. Root consisting of fasciculated fibres.

4. R. *lappaceus*. *Sm. in Rees Cycl. n.* 61. *De Cand. Prodr. v.* i. *p.* 39 ?—R. plebeius. *Br. in De Cand. Prodr. v.* i. *p.* 39 ?

Mr. Lawrence, (*n.* 10, 1831.—*n.* 146.)—*Mr. Gunn*, (*n.* 90.) Our specimens quite agree with the descriptions in *Rees' Cyclopædia.* De Candolle compares the species to the African *R. pinnatus:* Sir J. E. Smith, its original describer, with much correctness, to *R. acris.* Indeed some of the individuals can hardly be distinguished from that species. Sometimes the radical leaves are quite simple, 3-lobed, and incised, sometimes ternate, with the middle leaflet nearly sessile or on a long footstalk; roots of long dense fasciculated fibres. Flowers large: petals 5, broadly obovate, obtuse. Carpels orbicular, compressed, margined, terminated by a style nearly equal to it in length, revolute at the apex. May not De Candolle who, contrary to Smith, calls the leaves "pinnatisecta," and "pinnatifida," have confounded the following species with it?

5. R. *pimpinellifolius*, *n. sp.;* gracilis flaccidus patenti-hirsutus, foliis radicalibus longissime petiolatis pinnatis, foliolis 5 ovatis brevi-petiolulatis incisis terminali latiore trifidis vel tripartitis caulinis ternatis petiolatis, caule paucifolio, floribus parvis, petalis (5) flavis, calyce membranaceo setoso-piloso, carpellis immaturis stylo uncinato terminatis.—*an* R. lappaceus, *De Cand.* non *Sm.?*

Mr. Gunn,—in whose collection it is mixed with *n.* 90, *R. lappaceus*, from which, however, it is totally distinct. Flowers hardly ¼ the size; the radical leaves, which are on petioles a span long, are constantly pinnated and of a flaccid texture.

6. R. *glabrifolius*, *n. sp.;* foliis radicalibus glabris petiolatis profunde tripartitis, foliolis cuneatis incisis rarius bi-trifidis, caule paucifolio 1—2-floro, calyce apiceque pedunculi appresse pilosis, petalis (flavis) 10—12 oblongis.

Mr. Gunn, (*n.* 157.)—Three to 5 inches high, with the habit of small alpine specimens of *R. acris*, but different in the foliage, and especially in the petals, which are always numerous and oblong. The fruit I have not seen.

7. R. *leptocaulis*, *n. sp.*; annuus, caule gracillimo basi patenti-hirsuto remote folioso bi-trifloro, foliis (parvis) petiolatis hirsutis ternatis, foliolis cuneatis brevi-petiolulatis acute trifidis foliorum superiorum linearibus, floribus lateralibus brevissime pedunculatis, acheniis orbicularibus compressis punctatis submarginatis mucrone brevi rectiusculo terminatis.

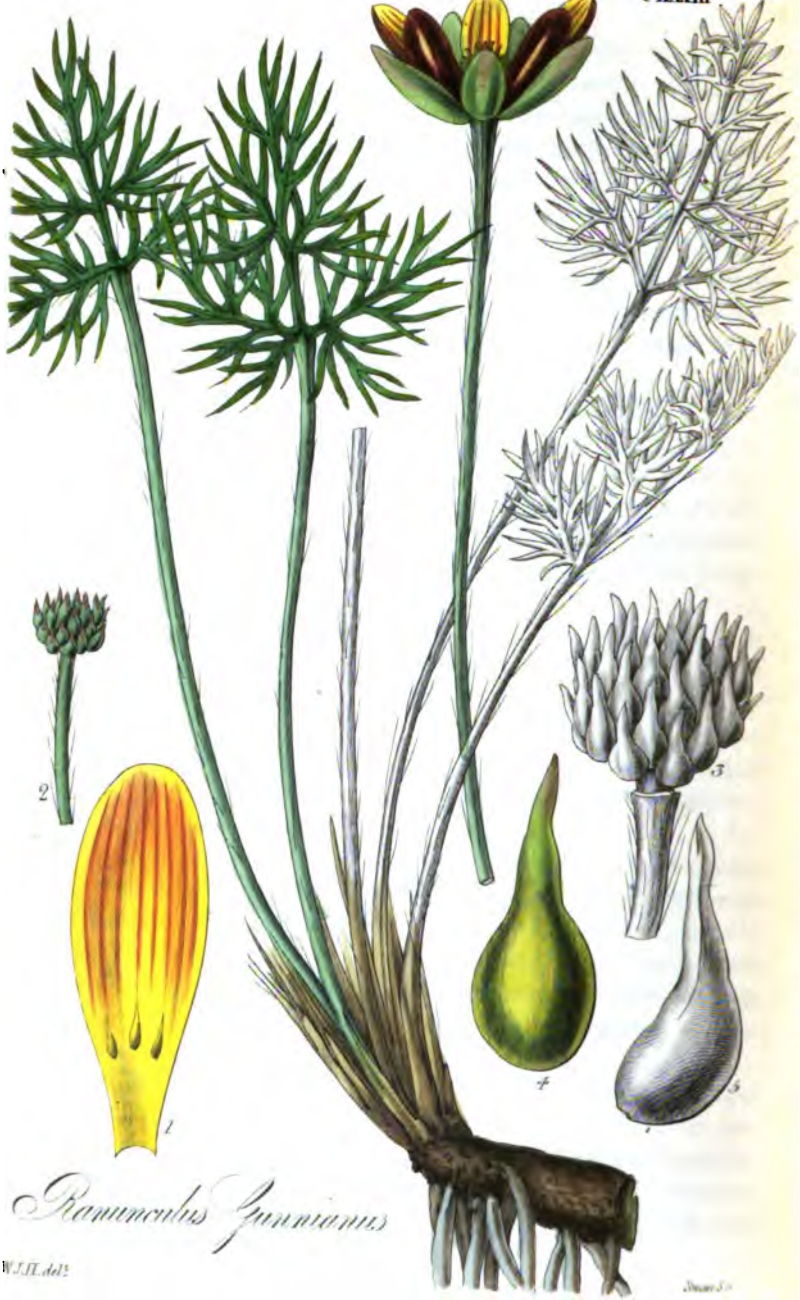
Swamps. *Mr. Gunn*, (*n.* 230.)—A very distinct and graceful little plant, with a slender flexuose stem about a foot long, simple or slightly branched. The perfect flowers I have not seen, but from what remains of them they appear to be very small.

8. R. *scapigerus*, *n. sp.*; sericeo-hirsutus, foliis omnibus radicalibus petiolatis tripartitis, foliolis obovato-rotundatis bi-trifidis segmentis acutis, scapo elongato gracili nudo vel submonophyllo unifloro, calycibus reflexis hirsutis, petalis calycem æquantibus 5 oblongis (flavis extus purpurascentibus), carpellis plurimis orbicularibus compressis lævibus longitudine styli recurvati apice uncinati.

Mr. Gunn, (*n.* 229.)—This is a very remarkable plant, in some measure identifying the following species more closely with *Ranunculus*; for here the flower is solitary and borne upon a scape, the petals are oblong, golden yellow within, tinged with purple and distinctly striated externally. They have, however, only a single gland or nectary at the base.

9. R. *Gunnianus*, *n. sp.*; parce sericeo-pilosus, foliis omnibus radicalibus longe petiolatis tripinnato-multifidis segmentis linearibus acutis, scapo unifloro, calyce membranaceo petalis 8—10 oblongis (flavis extus purpurascentibus) intus basi tri-glandulosis paulo breviori, carpellis subglobosis lævibus in stylum longum ancipitem rectum attenuatis. (Tab. CXXXIII.)

On the summit of the Western tier of mountains at about 4000 feet of elevation. *Mr. Gunn*, (*n.* 276.)—This is assuredly among the most remarkable and beautiful species of the Genus *Ranunculus*. The leaves and even the flowers resemble at first sight those of *Adonis Pyrenaica*, and the



Ranunculus Gunnianus

W.J.H. del.
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latter are nearly as large, but instead of being of an uniform yellow colour the outside is a rich purple, and within near the attenuated base of each petal are three distinct depressed naked glands; so that we might be almost justified in forming a new Genus of it. The scape is 8—10 inches high, the leaves more than half that length; the root an oblique trunk with numerous fleshy radicles.

Fig. 1, Petal. *f.* 2, Head of Carpels. (*nat. size.*) *f.* 3, the same, *magnified.* *f.* 4, 5, Separate Carpels,—all but *f.* 2, *magnified.*

DILLENIACEÆ. *DC.*

1. Pleurandra *riparia.* *Br. in De Cand. Prodr. v.* i. *p.* 72. *α. glabriuscula;* foliis subscabris nitidiusculis, calycibus glabris. —*β. pubescens;* foliis calycibusque pubescentibus.

α. Dr. Scott and *Mr. Lawrence* (1831.) (*n.* 224.) *Mr. Gunn,* (*n.* 32, 22, and 182.)—*β. Mr. Lawrence,* (*n.* 225.)—If I am correct in this species, it is a very variable one; the margins are revolute to the comparatively broad midrib, so as to exhibit two narrow lines or striæ on the back. The surface is sometimes scabrous and glossy, sometimes, as well as the calyx, clothed with short soft down.

2. P. *densiflora, n. sp.;* pubescenti-hirsuta, foliis lineari-oblongis acutis marginibus revolutis (sed non ad costam attingentibus), floribus sessilibus in ramulis brevibus densifoliis congestis, calycibus dorso præcipue sericeis.

Mr. Lawrence, (*n.* 227.)—This is all over downy with short appressed hairs: the leaves are much broader than in *P. riparia,* and the flowers are collected, 3 or 4 together, upon short ramuli with crowded leaves.

3. P.? *reticulata, n. sp.;* foliis erectis oblongis coriaceis rigidis mucronatis marginibus revolutis supra reticulatis areolis depressis subtus appresso-sericeis, floribus sessilibus.

Mr. Gunn, (*n.* 125, "A mountain plant.")—The very few flowers on the solitary specimens of this plant are so injured that I cannot satisfy myself with regard to its Genus; and

I may be altogether wrong in referring it even to the present Order. The leaves are an inch long, crowded, remarkable for being pitted with dark-coloured areolæ whose margins form a brown reticulation over the surface, on the upper side, while beneath they are clothed with appressed white silky hairs.

4. P. *ovata. Labill. Nov. Holl. v.* ii. *p.* 5, *t.* 143. *De Cand. Prodr. v.* i. *p.* 72.

Mr. Lawrence, (*n.* 203, 1831.)

1. Hibbertia *procumbens. De Cand. Prodr. v.* i. *p.* 74.—Dillenia procumbens. *Labill. Nov. Holl. v.* ii. *p.* 16, *t.* 156.

Mr. Lawrence, (*n.* 197, 1831.)

2. H. *prostrata, n. sp.;* foliis fasciculatis anguste linearibus subhirsutis, floribus sessilibus monogynis, caule brevi decumbente.

Mr. Lawrence, (*n.* 226.)—This comes very near *H. pedunculata*, Br. (*H. corifolia, Bot. Mag. t.* 2672,) and also to *H. fasciculata, Br. in De Cand. Prodr. v.* i. *p.* 74; differing from the former in its fasciculated leaves and sessile flowers; from the latter in the hairy leaves, procumbent stem and apparently single style.

CRUCIFERÆ. *Juss.*

1. Nasturtium *semipinnatifidum, n. sp.;* caule erecto folioso, foliis lanceolatis utrinque acuminatis glabris dentato-pinnatifidis, siliquis oblongis curvatis pedicellum æquantibus stylo breviusculo terminatis.

Mr. Gunn, (*n.* 74, 1832.)—In its foliage this species comes nearest to *N. natans*, but the pods are much longer and contain a greater number of seeds.

1. Cardamine *dictyosperma, n. sp.;* glabra, foliis omnibus petiolatis oblongis acutis integerrimis vel hic illic acute lobatis raro subpinnatifidis, siliquis erectis linearibus stylo longo acuminatis, seminibus oblongis aterrimis nitidis reticulato-punctatis.

Mr. Gunn, (*n.* 80, 1832.—*n.* 401.)—A very distinct species, a foot and a half tall, much branched below. Pods 2 inches long, including the style. Flowers rather small, white.

2. C. *tenuifolia, n. sp.;* glabra simplex, foliis omnibus pinnatis pinnis linearibus simplicibus remotis, siliquis linearibus stylo longo acuminatis.

Mr. Lawrence, (*n.* 237.) Marshes at Formosa.—The only species that I know, with which this can be confounded, is *C. tenuirostris* of Hook. and Arn. in the *Bot. of Beechey's Voyage,* and it is not unlikely but they may prove identical. In *C. tenuirostris,* however, the leaflets are occasionally again divided: in both, the flowers are large and white. I possess, from N. S. Wales, gathered near Bathurst and also near the Macquarrie River, a species with similar rostrate pods, but the leaves are nearly all radical and the leaflets orbicular or cordate.

VIOLARIEÆ. *DC.*

1. Viola *betonicifolia. Sm. in Rees' Cycl.*
Mr. Lawrence, (1831.) *Mr. Gunn,* (*n.* 84, 1832.)
2. V. *hederacea. Labill. Fl. Nov. Holl. v.* i. *p.* 66, *t.* 91.
Mr. Lawrence, (1831.) *Mr. Gunn,* (*n.* 95, 1832.)

DROSERACEÆ. *DC.*

1. Drosera *Arcturi, n. sp.;* foliis radicalibus lineari-spathulatis scapo unifloro brevioribus, calyce glaberrimo petalis vix breviori.

Summit of Mount Arthur. *Mr. Gunn,* (*n.* 139.)—This very fine species is at once distinguished by the shape of its leaves together with the solitary flower, which is as large as that of *D. binata.*

2. D. *peltata. Sm. in Rees' Cycl. Labill. Nov. Holl. v.* i. *t.* 126, *f.* 2.
Mr. Gunn, (*n.* 350.)
3. D. binata. *Labill. Nov. Holl. v.* i. *t.* 105.
Mr. Lawrence, (*n.* 144, 1831.)

POLYGALEÆ. *Juss.*

1. Comesperma *retusa.* *Labill. Nov. Holl. v.* ii. *t.* 160. *De Cand. Prodr. v.* i. *p.* 334.

Mr. Lawrence, (1831.) *Mr. Gunn*, (*n.* 179.)

2. C. *volubilis.* *Labill. Nov. Holl. v.* ii. *t.* 163. *De Cand. Prodr. v.* i. *p.* 334.

Dr. Scott, *Mr. Lawrence*, (1831, *n.* 174, and *n.* 181.) *Mr. Gunn*, (*n.* 147.)

TREMANDREÆ. *Br.*

1. Tetratheca *glandulosa.* *Labill. Nov. Holl. v.* i. *t.* 123. *De Cand. Prodr. v.* i. *p.* 343. *Sm. Exot. Bot. t.* 21?—*α.* floribus intense roseis.—*β.* floribus luteis.

α. Mr. Lawrence, (1831.) *Mr. Gunn*, (*n.* 194.)—*β. Mr. Lawrence*, (1831.)—This is well figured by Labillardière. The *T. glandulosa* of Sir James E. Smith is, by De Candolle, referred to the *T. pilosa*, but I think not correctly. Although Sir J. E. Smith has not described the leaves and stems as glandulose, they are represented most copiously in the plate; and again, though not so figured, the leaves are described as beset with little spines. Hence, I am rather inclined to consider it as belonging to this species than the following.

2. T. *pilosa*, *n. sp.;* eglandulosa, caule glabro, foliis omnibus linearibus sparsis integerrimis hic illic spinuloso-pilosis marginibus revolutis, pedunculis calycibusque glaberrimis.—*Labill. Nov. Holl. v.* i. *t.* 122. *De Cand. Prodr. v.* i. *p.* 343. (*excl. syn. T. glandulosæ*, Sm.?)—*β.* floribus albis.—*γ.* foliis lævissimis glabris, floribus paucioribus.

Dr. Scott, *Mr. Lawrence*, (1831.) *Mr. Gunn*, (*n.* 21, *n.* 193.)—*β. Mr. Lawrence*, (1831.)—*γ. Mr. Gunn*, (*n.* 309;—from the Western mountains, *n.* 217.)—Our specimens differ from the figure and description of Labillardière, inasmuch as the flowers are very numerous and crowded (except in the *var. β.*), and in no instance have I seen other than linear and entire leaves. Some of the specimens are quite destitute of the spinulose hairs which gave rise to the specific name, and in none is the calyx at all glandular. The *Tetratheca denticulata* of Sieber (*Herb. Nov. Holl. n.* 236,) comes very near Labillardière's plant, but it has the back of the calyx, as well as the margins, glandular. Our var. γ. is a smaller plant, quite destitute of spinulose hairs, with more distantly placed leaves and fewer and smaller flowers.

PITTOSPOREÆ. *Br.*

1. Billardiera *scandens*. *Sm. Pl. Nov. Holl. t.* i. *De Cand. Prodr. v.* i. *p.* 345.

Mr. Lawrence, (1831.) *Mr. Gunn.*

2. B. *longiflora*. *Labill. Nov. Holl. v.* i. *t.* 89. *De Cand. Prodr. v.* i. *p.* 345.

Mr. Gunn, (*n.* 169.)

1. Bursaria *spinosa*. *Cav. Ic. v.* iv. *t.* 350. *Bot. Mag. t.* 1767. *De Cand. Prodr. v.* i. *p.* 347.—β. *macrophylla;* inermis, foliis 3—4-plove majoribus.

Dr. Scott. Mr. Gunn, (*n.* 115, 1832.)—This is quite destitute of spines and has the leaves and flowers vastly larger than my N. S. Wales specimen; it may be a distinct species.

1. Pittosporum *bicolor*, *n. sp.;* foliis lanceolatis coriaceis marginibus revolutis subtus pallidis sericeo-tomentosis, pedunculis unifloris terminalibus axillaribusque, villosis.

Mr. Lawrence, (1831.) *Mr. Gunn*, (*n.* 154.)—This is very different from the *P. revolutum*, and so far as I can find, an undescribed species. The peduncles are all single-flowered, most crowded at the extremity of a branch, frequently solitary in the axils.

LINEÆ. *DC.*

Linum *angustifolium*. *Huds.—Engl. Bot. t.* 381.

Mr. Lawrence, (*n.* 154.)

CARYOPHYLLEÆ. *Juss.*

1. Stellaria *angustifolia, n. sp.;* glaberrima, foliis lineari-subulatis erecto-patentibus minute serrulatis, pedunculis elongatis unifloris, petalis bipartitis sepala trinervia albo-marginata æquantibus.

Mr. Lawrence, Formosa, (*n.* 241,) *Mr. Gunn,* (*n.* 238.)—An aquatic or marsh-plant, most nearly allied perhaps to our *S. uliginosa,* but the leaves are not atall glaucous, their margins are serrated, and the flowers are much smaller. Mr. Allan Cunningham has found both this and the following species on the continent of N. Holland.

2. S. *squarrosa, n. sp.;* caule decumbente-tetragono pubescente, foliis ovato-lanceolatis spinoso-acuminatis nitidis striatis conduplicato-carinatis recurvis ciliatis, pedunculo axillari pubescente (fructifero reflexo) foliis subtriplo longiori sepalis trinerviis rigidis.

Mr. Lawrence, (1831.) *Mr Gunn,* (*n.* 96.)—A most distinct and beautiful species.

MALVACEÆ. *Br.*

1. Sida *pulchella. Bonpl.—De Cand. Prodr. v.* i. *p.* 468. *Hook. Bot. Mag. t.* 2753.

Mr. Gunn, (*n.* 173.)

2. S. *discolor, n. sp.;* foliis oblongis lato-lanceolatisve obtusis crenato-serratis basi trinerviis supra nudiusculis viridibus subtus albidis dense stellato-tomentosis, floribus axillaribus (parvis) subracemosis, calycibus obtusis stellato-tomentosis.

Mr. Lawrence, (1831, *n.* 227.) *Mr. Gunn.*—Sent with the preceding, but a distinct, though nearly allied species: the leaves are larger, much more rigid, never at all cordate at the base.

ELÆOCARPEÆ. *Juss.*

1. Friesia *peduncularis. De Cand. Prodr. v.* i. *p.* 520.

—*Elæocarpus peduncularis. Labill. Nov. Holl. v.* ii. *t.* 155.

Western mountains. *Mr. Lawrence,* (*n.* 200, 1831.) (*n.* 302.) *Mr. Gunn,* (*n.* 312.)

HYPERICINEÆ. *Juss.*

1. Hypericum *involutum. Chois.—De Cand. Prodr. v.* i. *p.* 549.—*Ascyrum involutum. Labill. Nov. Holl. v.* ii. *t.* 174.

Mr. Lawrence, (*n.* 210.) 1831.

2. H. *pusillum. Chois.—De Cand. Prodr. v.* i. *p.* 549. —*Ascyrum humifusum. Labill. Nov. Holl. t.* 175.

Mr. Lawrence, (*n.* 149.)

1. Carpodontus *lucida. Labill. in Lapeyr. Voy. v.* ii. *t.* 18. *De Cand. Prodr. v.* i. *p.* 556.

Mr. Lawrence, (*n.* 80, 1831.) *Mr. Gunn,* (*n.* 272.)

SAPINDACEÆ. *Juss.*

1. Dodonæa *aspleniifolia. Rudge in Linn. Trans. v.* xi. *t.* 20. *De Cand. Prodr. v.* i. *p.* 617.—*Var. β.* foliorum apicibus magis dentato-sinuatis, ramis angustioribus.—*D. arborescens, All. Cunn. MSS.*

β. Mr. Gunn, (*n.* 377.) *Mr. Lawrence,* (*n.* 221,) (1831.)

2. Dodonea *salsolifolia, n. sp.;* foliis fasciculatis elongato-linearibus carnosis glabris supra canaliculatis, floribus dioicis, masculis glomeratis, femineis solitariis, pedunculo foliis multo brevioribus, fructibus trialatis.—D. salsolifolia. *Cunn. MSS. in Herb. Hook.*

Of this plant I have received specimens from the Royal Gardens of Kew, accompanied by Mr. Allan Cunningham's very appropriate name here adopted. The latter gentleman observes that it is a native of the colony of Port Jackson, whence it was many years ago sent to Mr. Aiton.

Mr. Cunningham. Mr. Fraser. Mr. Lawrence, (1831, *n.* 231.) *Mr. Gunn.*

GERANIACEÆ. *Juss.*

1. Geranium *potentilloides. L'Hérit.—De Cand. Prodr. v.* i. *p.* 639.

Western mountains. *Mr. Gunn,* (*n.* 259.)—Occasionally the peduncle bears two flowers.

2. G. *parviflorum. Willd. Enum.—De Cand. Prodr. v.* i. *p.* 640.

Dr. Scott. Mr. Gunn, (*n.* 63.)

3. G. *brevicaule, n. sp.;* pilosum, caule perbrevi procumbente, foliis longe petiolatis subradicalibus 5-lobis laciniis trifidis incisis, pedunculis unifloris brevissimis albo-deflexo-pilosis, calycibus sericeo-hirsutis, fructus rostro crassiusculo 5-angulato coccisque pubescenti-hirsutis.

Mr. Gunn, (*n.* 256, and *n.* 324.)—I know of no species that agrees with this:—from the shortness of the stems the petioles appear radical, (indeed they are frequently quite so): and hence too the flowers seem glomerated. Stamens 10, alternately broader, rather small.

1. Pelargonium *australe. Willd.—De Cand. Prodr. v.* i. *p.* 654.—*Var.* β. minus. *All. Cunningh. in Field's N. S. Wales, p.* 359.—γ. albiflora.—δ. glabriuscula.

Dr. Scott. Mr. Gunn, (*n.* 61, and *n.* 425; on the sea-coast.) β. γ. δ. *Mr. Gunn,* (*n.* 62.)

2. P. *erodioides, n. sp.;* subacaule patenti-hirsutum, foliis cordato-rotundatis subseptem-lobatis serratis, pedunculis radicalibus (digitalibus) subaphyllis, umbellis 3—7-floris, calycibus villosissimis, tubulo nectarifero subnullo.

Mr. Lawrence, (*n.* 325.)—This has at first sight so much the appearance of dwarf specimens of *P. australe,* that it is not surprising Mr. Lawrence should have judged it to be Mr. Cunningham's var. *minus* of that plant: but, independent of its small size, scarcely so high as one's finger, of the leaves being almost wholly radical, the scapes or peduncles rarely bearing even a single leaf, the nectary of the calyx is totally different, and so short and so obsolete as only to present a slight gibbosity or rather obliquity of the broader upper segment of it. The petals are more regular, bright rose-colour with deep purple streaks. It inhabits the western mountains of the island.

OXALIDEÆ. *DC.*

1. Oxalis *microphylla. Poir.—De Cand. Prodr. v.* i. *p.* 692.

Dr. Scott. Mr. Lawrence. (1831. *n.* 231.) *Mr. Gunn,* (*n.* 370. and *n.* 94.)—A species very near *O. corniculata,* and *repens,* and exhibiting in its leaves, especially on their under side, the same spongy and cellular structure. In some the leaves are almost white beneath.

RUTACEÆ. *Juss. DC.*

1. Correa *alba. Andr. Bot. Rep. t.* 18. *De Cand. Prodr. v.* i. *p.* 719.

Mr. Lawrence, 1831. Sea-coast and mouth of the Tamar. *Mr. Gunn,* (*n.* 428.)

2. C. *virens, n. sp.;* foliis deflexis ovato-oblongis sinuato-dentatis basi cordatis, supra viridibus scabris impunctatis subtus pallidis stellato-tomentosis, floribus terminalibus cylindraceis penduli dentibus calycinis obsoletis.

Mr. Lawrence, 1831. *Mr. Gunn,* (*n.* 152), who observes that it generally grows prostrate.

3. C. *Backhousiana, n. sp.;* foliis deflexis exacte ovatis integerrimis supra viridibus glaberrimis lævibus impunctatis subtus pannosis rufidulis, floribus 1—3 terminalibus oblongis pendulis, dentibus calycinis obsoletis.

Found at Cape Grim, on the west coast, very abundant, by *Mr. Backhouse* (1833.)—This, of which I have only seen one specimen obligingly communicated by Mr. Gunn, is truly distinct both from the preceding and following species. The leaves are very different in shape, quite entire and the pubescence beneath is of a totally different character: the corollas too are broader. Mr. Allan Cunningham found at Hobart Town, and Macquarrie Harbour, probably a var. of this with punctated leaves.

4. C. *Lawrenciana, n. sp.;* foliis erectis oblongis oblongo-lanceolatisve obtusis integerrimis utrinque glabris supra impresso-punctatis, floribus axillaribus solitariis pendulis, corollis cylindraceis, dentibus calycinis acutis.

Mr. Lawrence, (*n.* 151.) *Mr. Gunn,* (*n.* 153.)—This is indeed a most beautiful and distinct species, and worthy of bearing the name of a gentleman who has employed himself so zealously in making known the Natural History productions of Van Dieman's Land. It grows quite erect, to the height of 8 or 10 feet, with leaves quite glabrous, and resembling those of *Phillyrea angustifolia,* and flowers equal in size to any of the Genus, generally longer than the leaves, in a dry state of a yellow-green colour tinged with rufous at their extremities: the calyx, too, is rufous. Flowers in December and January.

1. Eriostemon *obcordatum,* (*Cunningham MSS.*)*;* foliis obcordato-cuneatis glabris carnosis grosse glanduloso-punctatis basi attenuatis, filamentis ciliatis, ramis glanduloso-tuberculatis.

About Hobart Town.—*Mr. Cunningham, Mr. Lawrence,* 1831, (*n.* 153.) *Mr. Gunn,* (*n.* 14.)

2. E.? *trinerve, n. sp.;* foliis obovatis obtusis coriaceis planis leviter marginatis utrinque glanduloso-punctatis subtus 3—5-nerviis.

Mr. Lawrence, 1831 (*n.* 91?).—Of this there is no flower and very small specimens: so that I am doubtful of the genus. The general form of the leaf is not unlike that of *Boronia serrulata,* and the size and texture are nearly the same.

1. Phebalium *retusum, n. sp.;* foliis oblongo-lanceolatis apice retusis supra nitidis punctatis subtus argenteo-lepidotis, pedunculis axillaribus brevibus 2—3-floris, filamentis glabris, ramis tuberculatis.

Dr. Scott. Mr. Lawrence, 1831.—Allied to *Phebalium Billardieri,* Adr. de Juss. (*Eriostemon squameum* of Labill.);

but much smaller in all its parts and the leaves are constantly retuse. On the under side, some of the scales are larger and darker coloured than the rest, and thus occasion a spotted appearance.

2. P. *montanum, n. sp.;* foliis teretibus punctato-glandulosis obtusis basi angustioribus supra linea exarata, pedunculis brevissimis unifloris in axillis foliorum supremorum.

Mr. Lawrence, (*n.* 321.): on the western mountains at an elevation of 3500 feet above the level of the sea. *Mr. Gunn,* (*n.* 223.)—The flowers quite agree with the Genus *Phebalium,* as given by Adr. de Jussieu, and the habit is so very much that of *P. diosmeum,* Ad. de Juss. (*P. phylicoides, Sieb. Herb. Nov. Holl. n.* 110.) that it may naturally rank next to it: still our plant has none of the silvery scales of the majority of species of *Phebalium,* nor the pubescence of the species just mentioned. It is quite glabrous in every part. The back of the leaves too is convex, the upper side furrowed. Calyx 5-cleft, with a bractea at its base. Petals obovato-lanceolate. Stamens 10, inserted at the base of a rather short fleshy torus: filaments filiform, longer than the petals: anthers subglobose. Ovary of 5 oblong obtuse lobes, glandular: style about equal to them in length. Stigma capitate.

1. Boronia *hyssopifolia. Sieb. Herb. Nov. Holl. n.* 296.

Mr. Lawrence, (1831.)

2. B. *pilosa. Labill. Nov. Holl. v.* i. *t.* 124. *De Cand. Prodr. v.* i. *p.* 721.

Mr. Lawrence, (1831.) *Mr. Gunn,* (*n.* 151.)

3. B. *variabilis, n. sp.*; foliis uni-bijugis glaberrimis crassiusculis, foliolis oblongo-spathulatis acutiusculis, pedunculis axillaribus 1—3-floris folio brevioribus, floribus 8-andris. —α. ramis glabris, foliis impunctatis.—β. ramis pubescenti-hirtis, foliis impresso-glanduloso-punctatis.—γ. ramis subpubescentibus, foliis eglandulosis.

Mr. Lawrence, (1831.) *Mr. Gunn,* (*n.* 8.)—β. *Mr. Gunn,* (*n.* 214).—γ. *Mr. Gunn,* (*n.* 303.), who observes that it is called *Lemon-plant.*

The leaves are remarkably glandular, as in *B. psoraloides*, and though thick the dots are pellucid when the foliage is held between the eye and the light. Were it not for the 8-androus flowers, I should have been inclined to refer this to *B. tetrandra*, Labill.

Z 1. Tieria *arborescens. Sims.—De Cand. Prodr. v.* i. *p.* 723.

Mr. Lawrence, (1831. *n.* 152,)—in shady ravines and mountainous creeks.—*Mr. Gunn*, (*n.* 140.) who observes that the colonial name is *Stink-wood.*

RHAMNEÆ. *Br.*

1. Discaria *australis. Hook. Bot. Misc. v.* i. *p.* 157, (in *note t.* 45. A.)—*Colletia pubescens. Brongn. in Ann. des Sc. Nat. v.* 10. *p.* 366.

Mr. Gunn, (*n.* 206.)—This interesting plant was previously only known by specimens gathered at Cox's River, Bathurst, and on the banks of the Macquarrie, N. South Wales, by Mr. Cunningham, and on which I established my Genus *Discaria* in the work above quoted. It is remarkable that the only other species is found (along with its near allies the *Colletiæ*) in South America.

1. Pomaderris *apetala. Labill. Nov. Holl. v.* i. *t.* 87. *De Cand. Prodr. v.* ii. *p.* 33.

Mr. Lawrence, 1831. *Mr. Gunn*, (*n.* 126.)

2. P. *elliptica. Labill. Nov. Holl. v.* i. *t.* 86. *Sim's Bot. Mag. t.* 1510. *De Cand. Prodr. v.* ii. *p.* 33.

Mr. Lawrence, (1831. *n.* 186.)—*Mr. Gunn*, (*n.* 440.) who remarks that it is called *Yellow Dogwood.*

3. P. *racemosa, n. sp.;* apetala, foliis (parvis) ellipticis serratis supra nudiusculis subtus fuscescenti-lanatis, racemis positis axillaribus nudis longitudine foliorum.

Mr. Lawrence, (*n.* 143, 1831.)—A species in habit very much resembling *P. betulina, Cunn. in Bot. Mag. t.* 3212; but the inflorescence is very different and destitute of bracteas, and the leaves are serrated.

4. P. *parvifolia*, *n. sp.;* foliis (parvis) elliptico-rotundatis sinuato-dentatis subintegerrimisque supra glabris impresso-venosis subtus cinereo-tomentosis marginibus revolutis, floribus glomerato-capitatis sessilibus bracteatis terminalibus petiolaribusque, petalis cucullatis erectis.

Mr. Lawrence, (*n.* 95. 1831.)—Leaves about half an inch long, when young equally covered with greyish down. Heads of flowers often from the middle of a petiole, subtended by two cuspidate bracteas larger than the rest. Flowers very small.

5. P. *ericifolia*, *n. sp.;* apetala, foliis linearibus pubescenti-scabris marginibus conduplicato-revolutis subtus cinereo-hirsutissimis, cymis parvifloris axillaribus folio vix longioribus, stipulis subulatis ramisque villosis.

Mr. Gunn, (*n.* 231.)—This is a true apetalous *Pomaderris*, and very unlike any other with which I am acquainted. The margins of the leaves are so completely revolute as to cover the whole back of the leaf: in which respect it differs remarkably from *P. phylicifolia*, Lodd.

1. Cryptandra *ulicina*, *n. sp.;* ramis strictis pubescentibus, foliis fasciculatis linearibus obtusis marginibus revolutis supra glabris subtus pubescenti-hirtis, bracteis extimis foliiferis, floribus sericeis, glandula epigyna magna plicato-lobata stylum circumjacente.

Mr. Gunn, (*n.* 150.) *Mr. Lawrence*, (*n.* 233.)

2. C. *vexillifera*, *n. sp.;* ramulis virgatis pubescentibus, foliis sparsis lineari-oblongis mucronatis marginibus revolutis supra glabris subtus pubescentibus, capitulis parvis terminalibus densifloris, bracteis extimis folium oblongum albo-tomentosum gerentibus, floribus monoicis minutissimis.

Port Dalrymple, *Mr. Frazer*. *Dr. Scott*. *Mr. Lawrence*, (*n.* 185.) *Mr. Gunn*, (*n.* 16.)

This is a very remarkable species, at once recognised by the very dense heads of minute flowers completely surrounded by brown membranaceous bracteas, 2 of which bear singularly white and downy leaves, very different from those of the stem.

3. C. *amara, Sm.—Rudge. in Linn. Trans. v.* x. *t.* 18. *f.* 2. *De Cand. Prodr. v.* ii. *t.* 38.—*C. ericifolia. Sieb. Herb. Nov: Holl. n.* 67. (*non Sm.*)

Mr. Lawrence, (*n.* 160. 1831).—This species has campanulate flowers, downy on the outside, and a conical, almost entirely free, downy ovary.

STACKHOUSIEÆ. *Br.*

1. Stackhousia *monogyna.—Labill. Nov. Holl. v.* i. *t.* 104. —*S. maculata. Sieb.?*

Dr. Scott. Mr. Lawrence, (*n.* 106. 1831.) *Mr. Gunn,* (*n.* 69.)

OBSERVATIONS ON SOME BRITISH PLANTS, PARTICULARLY WITH REFERENCE TO THE ENGLISH FLORA OF SIR JAMES E. SMITH. BY W. WILSON, ESQ.

[Continued from page 118 of Vol. II. of the 1st Series.]

I do not at present perceive it to be a necessary alternative, either to separate the Roses, as done in *Eng. Fl.* or to unite them altogether under one specific name, as is almost asserted, to have been done by a French botanist, (in *Eng. Fl. v.* ii. *p.* 390.)

61. Rubus *fruticosus* is so closely connected with *R. rhamnifolius,* that I can scarcely think the latter even a permanent *variety.* I have not seen it, but the straight deflexed *prickles* seem to constitute the only character of any importance.

62. Rubus *plicatus* differs from *R. affinis* only in the *leaves* being *hoary* beneath: even as varieties I fear they cannot well be separated.

63. Rubus *leucostachys;* an intelligible *variety,* on account

of its prismatic *stem*, and slender straight deflexed *prickles;* but *never found out of woods or shady situations;* and as *R. affinis* is not to be found *in* woods, I cannot help suspecting them to be varieties, depending solely upon their situation, and not permanent when removed. I have seen both in plenty, growing only a few yards from each other.

64. Rubus *glandulosus;* an intelligible variety, characterized by its glandular *calyx*, and *flower-stalks*, the latter plentifully supplied, in general, with straight spreading *prickles* just below the *calyx*, which is generally prickly.

65. Rubus *nitidus;* probably a state of *affinis*, depending on situation for its characters; frequent on stony barren dry ground, or where the soil is peaty, while on the adjoining hedges, in richer ground, more plentifully supplied with moisture, *R. affinis* is almost sure to be found.

66. Rubus *suberectus;* a good species, already well understood—grows in Cheshire.

67. Rubus *idæus*.—June, 1827. The prickles on the flower-stalk are a little bent, as mentioned in *Eng. Fl.;* but those of the calyx are straight.

68. Rubus *corylifolius*. The *broad segments* of the *calyx* seem to be most commonly wide spreading in the half-ripe fruit, as well as in the flower.

69. Rubus *cæsius*. However easy it may be in general to recognise this plant, some states either of this or of *corylifolius* are found which make it somewhat doubtful whether they do not pass into each other; but for the present I should propose to keep them distinct as varieties. The *convergent, bristly, calyx* is the best mark.

70. Potentilla *verna*, Ormeshead, May 17, 1826, 1828. I do not find the leaves rigid or coriaceous, nor, in general, very distinctly furrowed along the ribs and veins—neither can I perceive the interior segments of the calyx to be three-ribbed. The leaves are sometimes hairy on the upper surface. The large specimens found in Llandudno Bay (very little above high water mark) have confirmed my previous suspicion that it is not specifically distinct from *P. alpestris*.

NOTES *to the* THIRD VOLUME *of the* ENGLISH FLORA.

1. Papaver *hybridum*. Llandudno, N. Wales, June 11, 1828. The *calyx* copiously beset with coarse tawny ascending *bristles*, very different from *P. Argemone*. *Anthers* greyish-blue, oblong, bent or recurved. The *petals* are often bristly at the back.

2. Papaver *Argemone*. Llandudno, June 11, 1828. *Calyx* covered with a few scattered, white, erect *bristles*, similar to those of *P. dubium*. *Capsule* not so strongly furrowed as in *P. hybridum*. *Anthers* blue, rounded and compressed, not bent. *Filaments* like those of *P. hybridum*, clavate and compressed.

3. Papaver *Rhœas*. Anglesea, August 3, 1826, (rare). The segments of the leaves bristle-tipped, as in *P. hybridum*. *Stigma* 6 or 7-rayed, flat, as broad as the germen. Pubescence white.

4. Nymphæa *alba*. Anglesea, September 3, 1828. The *rays of the stigma* vary from 14 to 21; they are not pointed, but incurved at their extremity. The internal cavities of the flower and leaf-stalks, and even those of the leaves themselves, are lined with stellate bristles of 4 appressed rays, with an erect central one. *Seeds* attached to the sides of the cell, *covered with a doubled arillus*. In an early stage the arillus is only a turbinate *funiculus* below the rudiment of the seed, but its edges become gradually expanded until they wholly envelop the seed, the inner fold closely investing it, and the outer one very lax. Thus the arillus is really open at the extremity. Embryo turbinate with two rounded thick cotyledons, their inner surfaces concave. *Radicle closely applied to the side of the plumula*, both enclosed by the cotyledons and pointing the same way. The embryo is placed at that end of the seed where the hilum is found, and, as stated by De Candolle, it is enclosed "within a peculiar integument." *Seed* smooth and beautifully marked with black dots. In this the leaves have anastomosing veins.

5. Nuphar *lutea.* Anglesea, September 3, 1828. Leaves of much closer texture than in the last, so that the stellate pubescence of the cells is not evident. In this the radiating veins do not anastomose, but are parallel and repeatedly forked. The cavities of the leaf and flower-stalks have a lining of stellate bristles almost like *Nymphæa alba*, accompanied, in some cases, with an interrupted pithy substance. *Rays of the stigma* about 20, variable in number. *Seed yellow*, smooth and shining, *without an arillus. Embryo* as in *Nymphæa alba.*

6. Cistus *marifolius.* Gloddaeth, May 15, 1828.—June 11, 1828. *Petals* wedge-shaped, crenate and abrupt at the extremity, in the hot sunny weather reflexed or very widely spreading, at other times almost closed; *claw* much bent. *Style* doubled, or bent in the middle, the lower part obliquely inserted on the germen. *Germen* downy all over, unless at the base; "the 3 or 4 hairy lines" are probably the angles of the germen which are rather more hairy than the sides. *Capsule* ovate, acute, with 3 angles, hairy above, smooth below, the surface rather granulated. *Seeds* about 2 in each cell, stalked, inserted upon the lower part of the edge of the partition. The hairs on the upper surface of the leaves spreading, not appressed—there are usually two hairs together, or sometimes three or four connected at the base; pubescence of the lower side of the leaf stellate and appressed. The two small outer leaves of the calyx seem more like lateral appendages than distinct leaves. *Flowers* in a raceme, which is afterwards much elongated.

7. Galeopsis *Tetrahit.* August, 1826. The bristles on the stem and calyx are jointed, those forming a fringe to the calyx teeth are glandular. The bristles on the tube of the calyx converge over the unripe seeds, but afterwards become erect and the tube of the calyx is then much widened.

8. Galeopsis *versicolor.* September, 1826. *Anthers* two-celled, greenish grey, each cell two-valved. Valves ovate, the anterior one densely fringed and more or less hispid in

every part, the edge curling inwards, the posterior valve almost smooth. *Upper lip* of the *corolla* with jointed bristles, throat also hairy, and with glandular bristles. *Tube of the calyx* closed with bristles until the seed is ripe, the teeth also fringed.

9. Melampyrum *pratense.* Scotland, July, 1827. *Calyx-teeth* much longer than the tube, and very narrow, almost linear, curved upwards and *appressed to the corolla* and capsule. *Capsule* compressed.

10. Melampyrum *sylvaticum.* Near Killin, July 24, 1827. *Calyx-teeth* longer than the tube, but not so long as in the last, than which they are much broader, *spreading in the flowers, not turned upwards;* in the fruit they are slightly converging. *Capsule* not much compressed, *veiny, with a long, tapering, compressed beak. Corolla* shorter and *more suddenly inflated* at the mouth than in the last, and of a deeper yellow colour. *Stem* often covered with deflexed hairs.

11. Orobanche *major.* Wales, June 17, 1826. *Style* as long as the upper lip of the corolla. *Stamens* rather shorter.

12. Orobanche *minor.* Ormeshead, July 10, 1826. *Style* and *stamens* much shorter than the upper lip of the corolla. *Stamens sometimes nearly smooth. Stigma always yellow.* Parasitical on *Ulex europæus,* but generally upon Ivy, as at Conway Castle, where it is plentiful.

13. Subularia *aquatica.* Llyn y Cwn, June 30, 1828. *Petals* oblong. *Anthers* rounded and compressed, two-celled, the outer valve of each cell the largest, incurved, and lying contiguous to the capitate stigma, *so that when the cells open the globular viscid pollen is immediately attached to the stigma.* It is doubtful whether the impregnation is not accomplished previous to the expansion of the corolla; for when that takes place, the germen is usually so enlarged that the filaments are no longer of equal length with it, and the anthers are in this state closely applied to the side of the germen. The radicle and cotyledons in an immature state do very evi-

dently form a curve, with distantly placed extremities; but when justly ripe the radicle approaches very near the cotyledons.

14. Draba *verna.* April 12, 1827. *Cotyledons* very small, accumbent. *Seeds* roughish. *Leaves* a little toothed, scarcely "notched." The lower partial flower-stalks become elongated as the fructification advances.

15. Draba *hirta.* Ben Lawers. August 16, 1827. *Leaves* fringed with forked or stellate hairs. The stellate hairs are found on the stem, flower-stalks, backs of the leaves, and even upon the valves of the silicle. Except in the shape of the silicle, I see no material difference between this and *D. incana.* *Draba hirta* is found only about the summit of the mountain, sometimes growing with small plants of *D. incana.* *Cotyledons* accumbent.

16. Draba *incana.* Ben Lawers. July 13, 1827. *Partial flower-stalks* considerably elongated as the fruit ripens. *Cotyledons* accumbent. In Welsh specimens, the hairs on the upper surface of the leaf are mostly simple and appressed: below, they are stellate. A small roundish *nectary* at the base of each short stamen, on each side. *Petals* obovate, deeply notched. *Filaments* awl-shaped. *Anthers* roundish.

17. Lepidium *campestre.* Caernarvonshire, June 11, 1828. Border of the silicle not flat but incurved or concave on the upper side. *Pouch* covered with papillæ, as in *L. hirtum.* *Stigma* capitate, broader than the style. *Anthers* pale-yellow, roundish. *Calyx* longer than the pistil and not much shorter than the filaments.

18. Lepidium *hirtum.* N. Wales, (in plenty) June 11, 1828. *Petals larger and far more conspicuous than in the last.* *Anthers red, oblong,* very conspicuous. *Stigma* very small. *Style* projecting beyond the calyx. *Leaves* more strongly toothed than in the last.

19. Hutchinsia *petræa.* Wales, April 29, and May 12, 1828. *Calyx leaves* of unequal size, those opposite the sides of the germen larger than the rest. *Petals* almost linear, broader at the claw than in the middle. *Filaments* awl-

shaped. A nectary at the base of each petal. *Cotyledons* accumbent.

20. Crambe *maritima*. Anglesea, June 4, and September, 1828. The rudiment of the seed in the *lower* joint of the germen, has its *funiculus* inserted into the lower part of the *upper* cell, whereabout the funiculus of the other rudiment is also placed. Some traces of a partition are at times visible. The cotyledons are "folded," and may be considered either accumbent or incumbent; but since both the edges of each cotyledon are equally distant from the radicle it is more properly a seed with *incumbent* cotyledons.

21. Nasturtium *sylvestre*. Near Warrington, September 16, 1826. *Stems* hollow, rather woody, slender. *Flower-stalks* at length horizontally spreading, sometimes deflexed, about as long as the silique, which is bent upwards and crowned with the short permanent style. *Stigma* somewhat peltate. *Seeds* granulated, shining, light-yellowish brown. *Cotyledons* accumbent.

22. Arabis *thaliana*. May 4, 1827. (Common in Cheshire, &c.) Each *filament* has a *gland* at its base: those belonging to the shorter filaments are larger than the rest. *Petals* in cloudy weather, spreading: at other times erect. In a flowering state the stems are often drooping. Shorter filaments sometimes wanting. Herbage somewhat glaucous.

23. Brassica *campestris*. September, 1826. *Flower-stalk* variable in length; sometimes shorter than the beak of the silique. The glands on the outside of the longer filaments soon wither away. The others are more permanent, of a more abrupt shape. I cannot very easily understand the leaves to be pointed. The calyx-leaves cohere in pairs. The shorter filaments are opposite to the valves of the silique.

24. Brassica *oleracea*. Ormeshead, June, 1826. The *pods*, when ripe, are four-sided, two of the angles formed by the keels of the valves, the two others by the sutures. *Beak* very short, but not "wanting."

25. Fumaria *claviculata*. Cheshire, June 7, 1827. *Style*

transparent, united at a joint with the dark green beak of the germen. The beak gradually thickens. *Stem* 4-sided. The keel of the corolla has a very small indistinct spur, containing the nectary.

26. Orobus *tuberosus*. Cheshire, May, 1827. *Style* flat and two-edged, with a broad, blunt, compressed and recurved *stigma*. The *style* is fringed half-way down, and is also downy on the upper side for the same distance, the *pollen* frequently adhering to the hairs, which has probably given rise to the opinion of that part constituting the stigma. Stem 3-angled, but somewhat compressed.

27. Trifolium *ornithopodiodes*. Anglesea, June, 1828. *Corolla* longer than the calyx. *Filaments* connected with the claws of the keel, so that they are free only in their upper part. *Germen* hairy. The claws of the petals not more distinct than in *T. suffocatum* and *striatum*. There are traces of bracteas at the base of the calyx, as in *T. suffocatum*. Leaves more rounded and less wedge-shaped at the base than in *T .suffocatum*, and generally without a mucro at the extremity. *Legume* splitting along the upper edge only, and not separating into valves. *Seeds* attached to the upper edge.

28. Trifolium *suffocatum*. Anglesea, May, 1828. *Leaflets* constantly pointed. *Heads of flowers* not absolutely sessile.

29. Trifolium *striatum*. June 2, 1828. Tube of the calyx closed with erect hairs, inserted near the base of the segments.

30. Lotus *corniculatus*. August 25, 1826. The shorter filaments *not dilated* in a single instance, though I have dissected numerous flowers. *Claw of the standard* certainly wider above than in *L. major*, but the chief difference seems to consist in the vaulted or gibbous appearance of the upper part of the claw, which raises up the two teeth of the calyx above. The two upper teeth of the calyx broader than the rest, ovate, often converging, always widely distant from the other 3 lanceolate teeth, the interstice much rounded at the base and of a parabolic shape. *All the calyx-teeth shorter*

than the tube. *Stem* solid. *Legumes* a little depressed, channelled along the suture, shorter and thicker than in *L. major*, abruptly rounded at the extremity, so as to appear gibbous below the permanent, flattened, and deflexed beak, or base of the style.

31. Lotus *major.* August 23, 1826. *Stems* hollow throughout. *Claw of the standard* narrow, but not linear, very little vaulted, and not causing any perceptible elevation of the upper teeth of the calyx. *Calyx-teeth* much narrower than in the last, being linear, or tapering, and *always rather longer than the tube;* the two upper teeth not differing much from the rest, nor distantly separated; neither do they converge as in the last, and the interstice between them is angular at the base. *Legumes* mostly horizontally spreading; in a half ripe state cylindrical, but when ripe much depressed, *gradually tapering* at the extremity, by no means gibbous or abrupt as in the last, beak deflexed, sometimes almost hooked. The legume has a double ridge, especially along the upper suture.

32. Lotus *decumbens.* I fear this will not prove a good species. I found about Bangor, specimens of a *Lotus* somewhat agreeing with the description, but which I could not then satisfactorily distinguish from *L. major*, differing chiefly in size and its procumbent habit. I have not since pursued the inquiry.

33. Medicago *lupulina.* Cheshire, June 7, 1827. *Stipules* semicordate, not lanceolate, toothed. *Germen* downy, with glandular-tipped hairs, falling off as the fruit ripens.

34. Medicago *maculata.* Ormeshead, 1826. *Stems* 4-sided, hairy as well as the lower surface of the leaves and the calyx. *Leaves* not always spotted, on long foot-stalks. Leaflets almost sessile, inversely heart-shaped, toothed and pointed. *Heads* stalked with three or five flowers, with an ovate bractea at the base of each short partial flower-stalk. *Pods* nearly orbicular, with 3 turns, the exterior edge furrowed, and beset with devaricated *curved* spines. *Calyx-teeth* acute, all of equal length.

35. Hypericum *Androsæmum*. Wales, August 3, 1826. *Stem* round, 2-winged, not compressed, though the branches are slightly compressed. The *Berry* has a dark brown juice, but does not give a purple stain, (see *Dav. Wel. Bot.*) The leaves have a pleasant scent while drying, but I have not perceived that to be the case on their being bruised.

36. Hypericum *dubium*. Caernarvonshire, June and July, 1826. Stem round, with 4 wings, but not square, two opposite wings larger than the rest, all dotted like the leaves. The leaves have a row of black dots near the margin, and the veins are pellucid; blackish green above, rather glaucous beneath, indistinctly pointed. Segments of the calyx at first lanceolate, pointed and cut at the extremity, and besprinkled like the petals, with black dots, afterwards they become broader, and one or two of the segments are ovate and obtuse.

37. Hypericum *montanum*. Anglesea, August 14, 1826. Anthers with a dark gland at the summit, at first lateral and upright, afterwards horizontal.

38. Apargia *taraxaci*. Scotland, August 7, 1827. Leaves lying flat on the ground. Flower-stalks furrowed. Bracteas scattered along the upper part, awl-shaped. Teeth of the florets not always discoloured. Seed rough with transverse rugosities, making the profile appear as if serrated, but not evidently angular. Tube of the floret externally hairy. I have already mentioned my doubts of its being really distinct from *A. autumnalis*. Welsh specimens subsequently examined, and not differing materially from *A. autumnalis*, except in size, confirm the suspicions previously entertained.

39. Hieracium *alpinum*. Scotland, July 20, 1827. Florets externally hairy all over. Hairs of the leaves spinulose. This species is found on the Welsh mountains (near Llyn y Cwn), but very rarely.

40. Crepis *biennis*. Near Bangor, June, 1826. Such radical leaves as are visible in the season of flowering, are pinnatifid, with the lobes toothed in front. I have never seen them obovate.

41. Arctium *Lappa*. Near Bangor, August, 1826. Var. δ. Seeds compressed, corrugated, about 9 ribbed, the tops of the ribs forming a knobbed crown. Pappus with erect spinulæ. Tube of the floret permanent, swelled at the base, forming a beak to the seed.

42. Serratula *tinctoria*. Wales, July 29, 1826. Florets with a cylindrical tube. Limb suddenly swelled out, not so deeply divided as in the next, and the segments more spreading. Anthers protruded half their length beyond their florets, without any projection at the base. Filaments downy. Stigmas projecting more than in *S. alpina* and the segments sooner reflexed. Style downy, oblique, the outer ones much spreading. Seed-down irregular in length, rough with erect spinulæ, not feathery. Receptacles rather bristly than chaffy, the bristles in tufts.

43. Serratula *alpina*. Near Twll dû, July 29, 1826. The stem somewhat angular, in consequence of the midrib of the leaves being continued down it. Leaves with long entangled downy fibres underneath, on the upper side granulated, free from pubescence. Florets with an angular tapering tube. Limb much swelled at the base and divided into 5 deep, lanceolate erect segments. Anthers projecting beyond the corolla, with two long hairy projections at the base on the inner side of the filaments. Stigma just protruded beyond the anthers, two-parted, segments erect and close at first, subsequently reflexed. Style downy just below the stigma, oblique, pressing the anthers outwards so as sometimes to burst the tube. Seed-down irregular, that of the inner florets longest and most feathery. Receptacle chaffy, but often resembling the last.

44. Cnicus *palustris*. October, 1826. The outer scales of the calyx have a black viscid gland upon the keel.

45. Bidens *tripartita*. August, 1826. Leaves rather cut than serrate; with a double row of spinulæ along the somewhat thickened margin, very observable also on the bracteas which are spathulate rather than lanceolate, and apparently united at the base, I should rather have considered them an

outer calyx. Seed compressed, the margin fringed with spinulæ, as well as the three bristles at the top; of which the two outer ones possess three rows of spinulæ; the middle bristle two rows only.

46. Bidens *cernua.* September 4, 1826. Bracteas edged with spinulæ, as in the last, but less distinctly so. Fruit compressed, with 4 angles, thickened upwards, the angles fringed with deflexed spinulæ. The two lateral bristles at the crown, with three rows of spinulæ, the other bristle with two rows only.

47. Gnaphalium *supinum.* Ben Lawers, July 17, 1827. Root fibrous, not black, branched at the crown, and bearing several stems.

48. Tussilago *Farfara.* April 28, 1827. In this species the common calyx appears to be simple, though in *T. Petasites* the scales are in two rows. Seed down rough with ascending spinulæ.

The central tubular florets barren, those of the circumference, generally fertile. Embryo straight; with two oblong cotyledons. Stigma of the central florets short and thick, never projecting beyond the anthers, but often appearing below them. It sometimes is found with several florets on the same common stalk.

49. Tussilago *Petasites.* April 10, 1827. Near Warrington. Gen. Char. Common calyx imbricate in two rows, scales rather lanceolate than linear.—The "tumid foot-stalks" on the lower part of the flower-stalk are *dilated,* almost membranous, *bracteas.* Both the varieties are frequent near Warrington, generally growing in company. *T. hybrida* in such cases generally more abundant than the other. In *T. hybrida,* the florets of the circumference are irregularly 5-cleft, the stigma for the most part 3-cleft. Specimens with perfectly formed seeds were gathered in May 1827. The florets of the ray are always fertile, in many cases I observed the whole of the florets, except two or three of the central ones to have ripened their seeds.

50. Tussilago *hybrida.* Without attempting to controvert

the supposition of this being a state of *T. Petasites*, "in which the fertile or seed-bearing organs *predominate*," I should still consider it, even in the absence of all proof of the fact, as more justly the type of the species than *T. Petasites*, *α.* in which the radial florets are not found at all, and in which the only florets supposed to be fertile are "a few found occasionally towards the centre" of the disk. The abundance of rays on *Tussilago Farfara* has not, as it should seem, yet led to the suspicion of its being a variety. Suppose the existence of two states of *Calendula officinalis*, one, as is commonly seen in gardens, with the florets nearly all ligulate, and another with none but tubular florets; and then in my opinion this case of *Tussilago hybrida* will be found an exact parallel to the first variety of *Calendula*, which is surely less distantly removed from its original state than the supposed second variety would be.

It does indeed remain to be ascertained whether or not any of the florets in *Tussilago Petasites*, *α.* produce perfect seeds; but I should consider the supposition of perfect central florets as wholly gratuitous; and even if proved to be true, I cannot think it would furnish an argument in favour of the var. *α.* being the type of the species.

Again, it is said that the flowers of *Senatula tinctoria* are "in effect diœcious, those in one plant having imperfect anthers, those, on another abortive stigmas." *Eng. Fl.* iii. 383. May not this be the case with *Tussilago Petasites?*

51. Senecio *lividus.* Staffordshire (H. W.) September, 1826. I do indeed find the scales of the calyx not discoloured, as in *S. sylvaticus*, and the outer ones are, as stated in *Eng. Fl.* "very narrow and acute." The herb is unpleasantly scented even when dry, but not at all like Fennel. Seeds with about twelve rows of close pressed hairs. Leaves rough on the upper surface. Receptacle honeycombed. Florets of the ray 3-toothed and strongly revolute. I cannot, as yet, think it really distinct from *S. sylvaticus.*

52. Senecio *sarracenicus.* River side near Warrington, September, 1826. Neither acrid nor astringent that I can

find, though it has an unpleasant scent when bruised. Seeds oblong, not obovate, light-brown, furrowed. A succulent plant; not easily dried.

52. Pyrethrum *maritimum*. Near Liverpool. (*Sir J. E. Smith's habitat.*) September 12, 1827. *Stem certainly not hollow.* Segments of the leaves not wholly destitute of points. Seeds of the ligulate florets with a deeply 4-lobed cup-shaped crown, below which, externally, are two yellow oblong bodies extending half way down the seed, which is not in that part much furrowed, though it is deeply so on the other side. Segments of the tubular florets keeled at the back, the line very prominent just below the apex of the segment. I consider it a mere variety commonly found on the sea-shore in Anglesea and elsewhere.

54. Anthemis *nobilis*. Near Warrington, September, 1826. Stems taking root, when they touch the ground. Leaves with segments convex above, flattened and ribbed beneath.

55. Anthemis *Cotula*. Anglesea, August 24, 1826. Stem solid. Scales of the receptacle not always bristle-shaped, often linear-lanceolate, acute, keeled or concave on one side, the keel strong and the border membranous, sometimes jagged and much dilated, always shorter than the florets. Limb of the tubular florets in 5 ovate spreading segments, and somewhat toothed in the throat below the segments. Florets of the ray about nine, and, so far as I have seen, without any style. In the other florets the stigma is divided into two abrupt portions. Seed without any border, tuberculated, obovate.

56. Centaurea *Scabiosa*. July 29, 1826. Near Bangor. The tubular florets with five dark purple ribs below the limb, becoming forked at the laciniæ and extending a little way along the margin of each segment. Seed down or bristles with slender erect spinulæ.

(*To be continued.*)

(TAB. CXXXIV.—CXXXVI.)

NEW OR RARE ORCHIDEÆ.

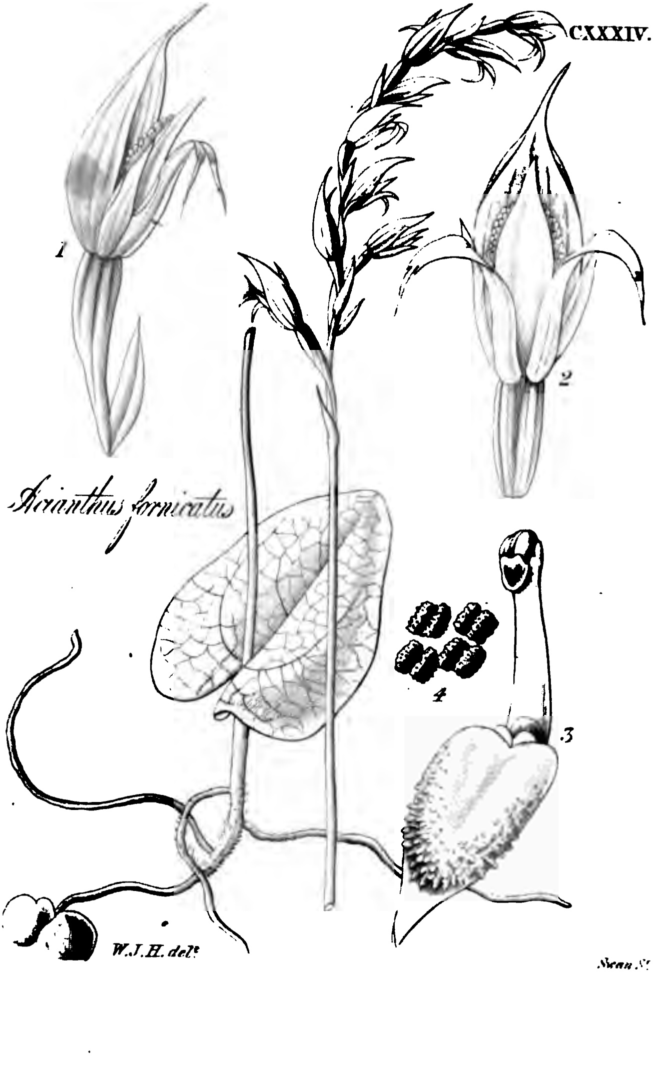
IN pursuance of the plan proposed in a late number of this Journal, I have the pleasure to offer figures and descriptions of 3 Australian *Orchideæ*, which (not having, so far as I am aware, been yet cultivated in our gardens) I am enabled to do by the kindness of Mr. Richard Cunningham, who knowing the interest that the botanists of this country feel in that beautiful family, has, almost immediately on his arrival at Port-Jackson, directed his attention to them. Many of the species will probably ere long, through his exertions, be cultivated in our green-houses.

ACIANTHUS. *Br.*

Perianthium subringens, *foliolis anterioribus* aristatis, lateralibus labello oppositis, *interioribus* minoribus, situ variis. *Labellum* dissimile, foliolis brevius, indivisum, porrectum, basi bicallosum, disco inappendiculato. *Columna* semiteres, apice inauriculato. *Anthera* terminalis, persistens, loculis approximatis. *Massæ pollinis* in singulo loculo quaternæ, *v.* binæ bipartitæ.—Herbæ *terrestres, glabellæ.* Bulbi *indivisi, solitarii, nudi, caudicem descendentem? radiciformem terminantes, novello pedicellato.* Caulis *unifolius et ipsa basi vagina brevi inclusus, supra ebracteatus.* Folium *profunde cordatum, acutum, trinerve, reticulato-venosum, subtus rufum.* Flores *racemosi v. solitarii, rufi. Br.*

A. *fornicatus;* floribus racemosis, aristis perianthio quadruplo brevioribus foliolis interioribus erectiusculis, labello longitudinaliter papuloso, columna inclusa. (TAB. CXXXIV.) *Br. Prodr. v.* i. *p.* 321. *Lindl. Gen. et Sp. Orchid. p.* 25.

CXXXIV.



Acianthus fornicatus

W.J.H. del.

Swan Sc.

Hab. Circa Portum Jackson. *Brown. A. et R. Cunningham.*

Radix fibrosa, fibris paucis crassiusculis simplicibus: *tubera* 2, globosa, magnitudine *pisi sativi.* *Caulis* erectus, spithamæus, gracilis, simplex, monophyllus. *Folium* paullo supra basin caulis insertum, cordatum, obtusum, reticulatum, sinu profundo angusto. *Flores* racemosi, subspiraliter inserti, erecti, bracteati; bracteis subulatis germine brevioribus. *Perianthii* erecti *foliola* 3 aristata; quorum superius magnum ovato-oblongum, valde concavum, subfornicatum; 2 lateralia labello supposita, linearia: 2 interiora minora, lineari-subulata. *Labellum* erectum, oblongo-ovatum, acuminatum, disco convexo, cujus margines præcipue papulosi. *Columna* inclusa subteres, labello paullo brevior. *Anthera* hemisphærica: *Massæ pollinis* 8, per paria approximata, granulosa.

On account of the small size of the flowers and the readiness with which the pollen-masses are disturbed, when the anther is removed, I could not satisfactorily detect the arrangement of these bodies in the cells of the anthers. The Genus Mr. Lindley places with his *Malaxideæ*, but he considers it to hold a middle rank between that tribe and the *Arethusæ* on account of the structure of the pollen.

Tab. CXXXIV. Fig. 1, Side view of a flower. *f.* 2, Front view of do. *f.* 3, Column and labellum; the latter bent down. *f.* 4. Pollen-masses:—*magnified.*

CYRTOSTYLIS. *Br.*

Perianthium bilabiatum, foliolis muticis, quatuor lateralibus subæqualibus, patulis. *Labellum* dissimile, porrectum, planum, obtusum, indivisum, basi bicallosa. *Columna* semiteres, apice dilatato. *Anthera* terminalis, persistens, loculis approximatis. *Massæ pollinis* in singulo loculo binæ, compressæ, pulvereæ.—Herba *habitu fere* Acianthi, (cui forte nimis affinis.) Folium *reniforme, multinerve.* Flores *sæpius resupinati,* (nostra acceptatione.) *Br.*

C. *reniformis.* (Tab. CXXXV.)—Br. *Prodr. Fl. Nov. Holl. v.* i. *p.* 322.

Hab. Ad Portum Jackson. *Brown. A. et R. Cunningham.*

Radix subfusiformis, basi tomentosa, fibras perpaucas simplices gerens, caudice tuberibus 2 parvis subrotundis. *Caulis* digitalis, erectus, gracilis, ad basin monophyllus. *Folium* cordato-reniforme, obtusissimum, radiato-nervosum, tenue. *Racemus* pauci—(3—4) florus. *Flores*, ratione plantæ, majusculi, nonnunquam resupinati. *Perianthii foliola* patentia, linearia, supremum cæteris latius, subspathulatum, marginibus inflexis. *Labellum* oblongum, obtusum, striatum, basi intus bituberculatum. *Columna* semiteres, inflexa, apice utrinque ala dilatata. *Anthera* terminalis, demum, ut videtur, longitudinaliter dehiscens. *Massas pollinis* non vidi.

Tab. CXXXV. Fig. 1, Flower. *f.* 2, Labellum. *f.* 3, Column: —*magnified.*

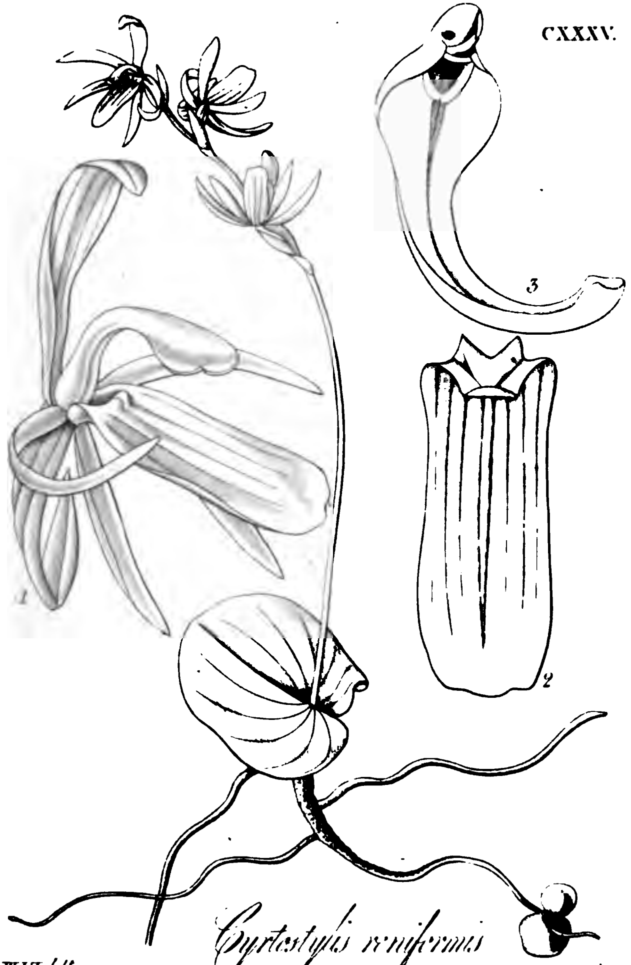
PTEROSTYLIS.

Perianthium ringens tetraphyllum, *foliolo inferiore* bifido (e duobus infra confluentibus conflato.) *Labellum* unguiculatum subinclusum. *Lamina* basi appendiculata v. gibbosa; ungue infra labio inferiore connato. *Columna* basi galea connata apice alata. *Anthera* terminalis, persistens, loculis approximatis. *Massæ pollinis* in singulo loculo binæ, compressæ, pulvereæ. *Stigma* medio columnæ adnatum.—Herbæ *terrestres glabræ.* Bulbi *nudi, indivisi, caudicem descendentem radiciformem terminantes.* Folia *nunc radicalia, stellata, nervosa, membranacea, scapo bracteato aphyllo; nunc caulina alterna, radicalibus nullis.* Flores *solitarii, ramisve racemosi, ochroleuci, sæpius majusculi. Br.*

P. *concinna;* foliis radicalibus stellatis, scapo medio unibracteato, labelli laminae marginata inclusa columnam æquante. (Tab. CXXXVI.) *Br. Prodr. Fl. Nov. Holl. v.* i. *p.* 326.

Hab. Prope Portum Jackson. *Brown. A. et R. Cunningham.*

CXXXV.

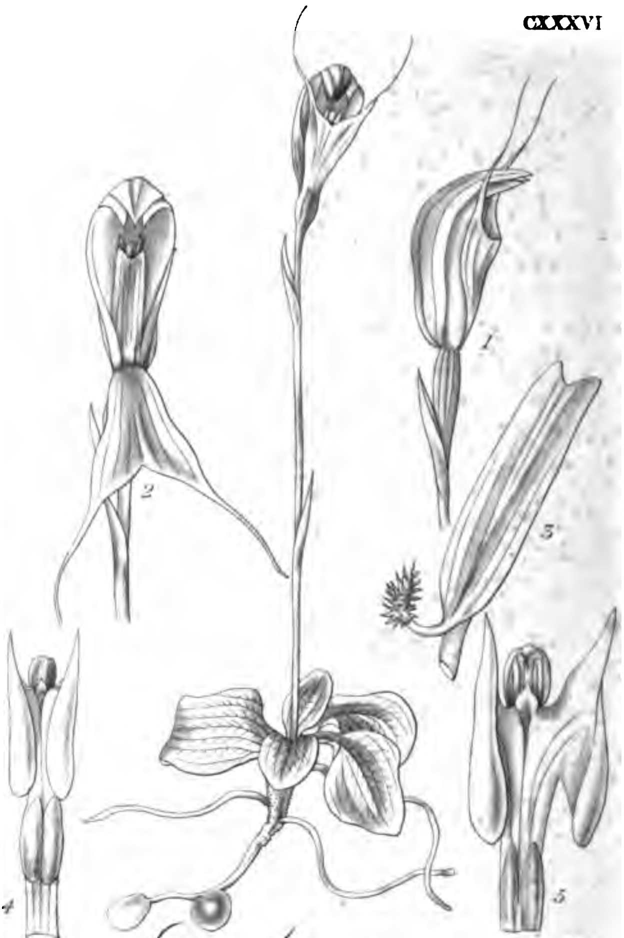


Cyrtostylis reniformis

W.J.H. del.

Swan Sc.

CXXXVI



W. J. H. del.

Pterostylis concinna

Swan Sc.

Tubera 2, parva, globosa, versus apicem radicis subfusiformis basi pubescentis sita. *Folia* radicalia 4—6, parva, cordato-ovata, striata, reticulata, basi in petiolum dilatatum subattenuata. *Scapus* digitalis, erectus, medium versus et infra apicem bractea lanceolata-subulata instructus, apice uniflorus. *Perianthium* erectum. *Foliola* 3 *superiora* oblongo-lanceolata, acuta, erecta, approximata, galeam fornicatam æmulans: 2 *inferiora* in unum obovatum, profunde bifidum cohærentia, laciniis longe acuminato-aristatis, aristis galea multo longioribus. *Labellum* parvum, erectum, omnino inclusum, lineari-oblongum, apice trifidum, basi appendice penicillata pedunculata instructum. *Columna* infra medium bituberculata, apice bialata, alis magnis subinvolutis acuminatis.

This beautiful little Orchideous plant is, perhaps, the smallest of the Genus, of which 19 species are enumerated in Mr. Brown's "Prodromus;" and the greater part of them are natives of the vicinity of Port Jackson or of Van Dieman's Land. Some of them have been successfully cultivated at the Kew Gardens, and 3 are figured in the Botanical Magazine.

TAB. CXXXVI. *Fig.* 1, 2, Flowers. *f.* 3, Labellum. *f.* 4, 5, Column:—*magnified.*

CONTRIBUTIONS TOWARDS A FLORA OF SOUTH AMERICA AND THE ISLANDS OF THE PACIFIC;

BY W. J. HOOKER, LL.D. AND G. A. W. ARNOTT, ESQ., A.M., F.R.S.E.

1. *Extra-tropical, South America.*

[Continued from page 367 of the 3d Volume, of the 1st Series of this Work.]

SOME additions to our South American Collections, of which we have become possessed since we published our last Memoir on this subject, have been mentioned at p. 175, and following pages of the present volume. Mr. Tweedie having extended his researches on the Atlantic side of that vast continent, from the Plata, along the coast, to St. Catharine, South Brazil, in S. lat. 27° 10′, we shall include these plants in the present division of our subject, reserving, however, all the *Thalamifloræ* and *Calycifloræ* before *Compositæ*, for a supplementary paper. The Order last mentioned should have come next in course, and have formed the commencement of the present article: but as Professor De Candolle is preparing a History of this vast Order for his "Prodromus" at this very time, and as Mr. David Don is especially engaged on the South American Genera of this family, and has kindly undertaken the examination of Dr. Gillies' and our own collections, we have thought it better to wait that we might take advantage of their important labours, and render this part of our contributions more valuable to the botanist.

654. (1) Selliera *radicans*, Cav. *Ic. v.* v. *p.* 49. *t.* 474. *f.* 2. (good.)—Goodenia repens, La Bill. *Nov. Holl. v.* i. *t.* 76. (bad.) Br. *Prod. v.* i. *p.* 379.—Valparaiso, *Cuming* (*N.* 765); *Bridges*, who also finds it at Quillota (*N.* 262), and at Valdivia near the sea (*N.* 662.) Conception, *Cuming* (N. 134.)

Ir. Bridges, who sends this plant under the name of *Lobelia hulata*, observes that it is called by the natives "Yerba a Maria," and that the leaves are used to cure wounds.

5. (1) Lobelia (Siphocampylus, *Pohl*,) *verticillata*, Cham. *innæa* v. viii. *p.* 202.—Entrance of Lagoa de los Patos, *edie*, (*N.* 792.)

6. (2) Lobelia (Pratia, *Gaud.*) *hederacea*, Cham. *in æa*, *v.* viii. *p.* 212.—β. *elliptica;* foliis ellipticis sub- ibus.—L. odorata, *Grah. in Ed. N. Ph. Journ*, 1831. ithin tide-mark of Rio de La Plata near Buenos Ayres, *edie.*—The fruit of this plant does not appear to us to r from that of the true species of *Lobelia*, and does not l resemble that of the other species of *Pratia*.

7. (3) L. *nummularioides*, Cham. *in Linnæa*, *v.* viii. 9.—Moist spot at the foot of Via Monte near Porta- e, *Tweedie*, (*N.* 520.)

58. (4.) L. *alata*, Br. *Prod. Nov. Holl. v.* i. *p.* 562.—L. incola, Bert. *MSS.*—Moist maritime rocks at English , Juan Fernandez, *Bertero*. Near El Castello de Amargos, y of Valdivia, *Bridges*, (*N.* 660.)—α. *angustifolia*, Br. *l. c.* L. alata, Labill. *Nov. Holl. v.* i. *p.* 51. *t.* 72.—β. *cuneifolia*, . *l. c.*—L. cuneifolia, Labill. *Nov. Holl. p.* 51. *t.* 73.—On nparing our specimens, both from Juan Fernandez and Valdivia, with *L. alata* of King George's Sound, New Holland, we find them entirely to correspond and to be intermediate in the shape of the leaves between the two varieties mentioned by Mr. Brown. The β. we possess from Swan River, N. Holland.—The lower part of the stem only is procumbent and creeping; the whole plant is quite glabrous; the stem herbaceous, distinctly winged, and from 8 inches to a foot high.

659. (5) L. *polyphylla*, Hook. & Arn. *in Bot. Beech. Voy. p.* 33.—Valparaiso, *Lay and Collie; Bridges; Cuming*, (*N.* 599.)—β.; foliis angustioribus. Coquimbo, *Cuming* (*N.* 888.)

660. (6) Lobelia *purpurea*, Lindl. *Bot. Reg. t.* 1325.— Valparaiso, *Macrae; Bridges* (*N.* 260.)

661. (7) Lobelia *salicifolia*, Sweet in *Hort. Suburb. Lond.* *p.* 37.—L. gigantea, Sims, *Bot. Mag. t.* 1325. (*non* Cav.) —L. arguta, Lindl. *Bot. Reg. t.* 973.—L. Tupa, *Hort. Kew.* —Valparaiso, *Macrae; Dr. Gillies.*

662. (8) Lobelia *Bridgesii* (Hook. & Arn.); suffruticosa glabra simplex, foliis oblongo-lanceolatis submembranaceis sensim anguste acuminatis minute serratis basi decurrentibus, racemo elongato bracteato bracteis pedicelli longitudine, corollæ glaberrimæ tubo dorso fisso basi fissuris 5 quasi 5-petala laciniis lineari-acuminatis, antheris tubum paullo superantibus dorso glabris anterioribus duabus apice barbulatis.—Near El Castello de Amargos, Valdivia, *Bridges*, (*N.* 663.)—A fine species, which will rank next to *L. Tupa.* It is from 4 to 6 feet high, quite glabrous. The flowers are shorter than in *L. Tupa*, and apparently of a pale purple colour.

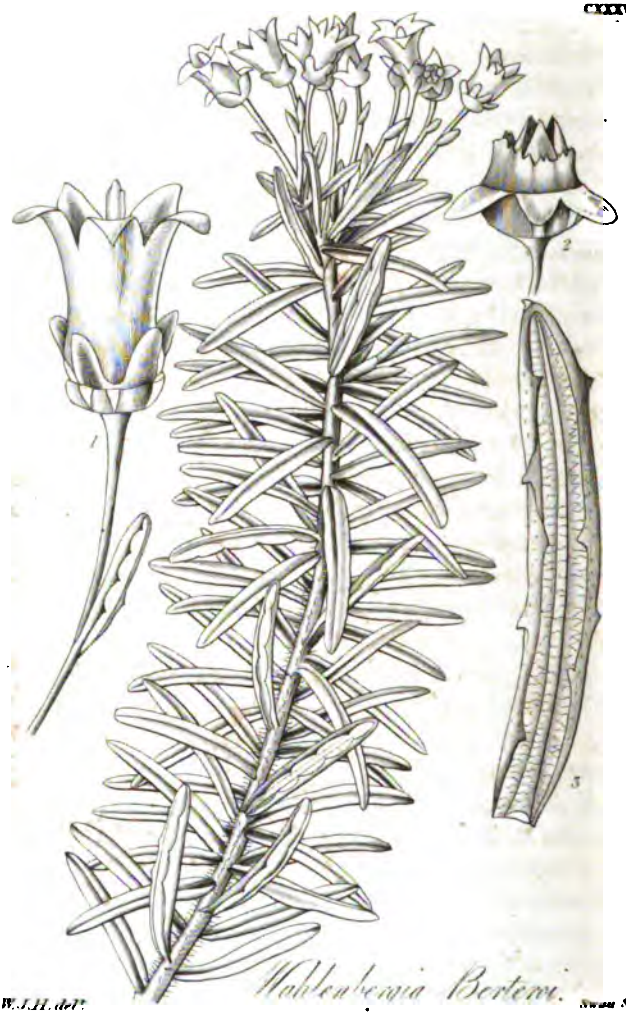
663. (9) Lobelia *Tupa*, Linn.—Sm. *in Rees' Cycl.* (*vix* Sims, *Bot. Mag. t.* 2550, *non* Ait.) Lindl. *Bot. Reg. t.* 1612 (excellent.)—*Feuill. Chil. v.* ii. *t.* 29.—Conception, *Cuming*, (*N.* 143.) Juan Fernandez, *Douglas.* Valdivia, *Bridges*, (*N.* 661.)—In the figure given by Dr. Sims in the Bot. Magazine, and in Sweet's Brit. Flower-Garden, the leaves are not represented decurrent, as is the case with the true plant.

664. (10.) Lobelia *mucronata*, Cav. *Ic. v.* 6. *t.* 516. *Hook. Bot. Mag. t.* 3207.—L. Tupa, Sims *Bot. Mag. t.* 2550? —Valparaiso, *Mr. Cruckshanks; Mr. Bridges.*

(We are unacquainted with the Chilian *L. cordigera* of Cavanilles, which seems allied to *L. mucronata*, but has broader leaves and the lobes of the lower lip of the corolla remarkably broad while those of the upper are narrow. *L. decurrens*, of the same author, we possess only from Peru.)

665. (1.) Wahlenbergia *linarioides*, Alph. De Cand. *Camp. p.* 158.—Campanula linarioides, Lam.—Sandy coast of the Uraguay, *Tweedie*, (*N.* 726.)—β. filiformis. Alph. de Cand. *l. c.*—Campanula filiformis, R. & P. *Fl. Per. v.* ii. *t.* 200. *f.* C. —C. Chilensis, Molina.—Valparaiso, *Cuming*, (*N.* 362);

CXXXVII



Wahlenbergia Berteri.

W.J.H. del.t Swan Sc.

Lay & Collie; Bridges, (*N.* 113,) and along the sandy plains to the mountains. La Isla de Mansera, Bay of Valdivia, *Bridges*, (*N.* 602.)

666. (2) Wahlenbergia *Fernandeziana*, Alph. De Cand. *Camp. p.* 160.—Campanula Larrainii, Bert. *Mss.*—Juan Fernandez, *Mrs. Graham; Dr. Scouler; Douglas; Bertero.*—To the singular groupe of the genus to which our present plant and the following belong, Alph. de Candolle has given the name of *Nesophila*, the five species which he describes being all inhabitants of islands, and what is remarkable, of two exclusively; the one in the Pacific (Juan Fernandez), and the other in the Atlantic Ocean (St. Helena.)

667. (3) Wahlenbergia *Berteroi* (Hook. & Arn.); caule sublignoso erecto ubique folioso hirsuto, foliis rigidis lineari-oblongis mucronulatis supra glabris impresso-punctatis subtus hirsutis margine revoluto distanter denticulato, pedunculis approximatis corymbosis simplicibus foliosis sub unioris, tubo calycis hemisphærico lobis integerrimis, corolla infundibuliformi. (Tab. CXXXVII.)—Campanula gracilis, Bertero *MSS.* (*non* Forst.)—In the clefts of rocks of the more elevated mountains and in Goat's Island, Juan Fernandez, *Bertero**, (*N.* 1442.)

TAB. CXXXVII. Fig. 1, Flower. *f.* 2, Capsule. *f.* 3, leaf:—*magnified.*

668. (1) Specularia *perfoliata*, Alph. De Cand. *Camp. p.* 351.—Campanula perfoliata, L.—C. amplexicaulis, Mich. —C. biflora, R. & P. *Fl. Peruv. t.* 200. *f. B.*—C. flagellaris, Humb. & Kunth, *Nov. Gen. v.* iii. *t.* 265.—Buenos Ayres and the sandy shores of the Banda Orientale, *Tweedie.*—San Isidro and Quillota, *Bridges*, (*N.* 527.) Valparaiso, *Cuming*, (*N.* 487.)

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* Our estimable friend M. Guillemin, in his "Archives de Botanique" has most liberally expressed a wish that we should publish in this list the species that we have received from the lamented Bertero, which are chiefly from the island of Juan Fernandez.

669. (1) Sarmienta *repens*, R. et P. *Fl. Per. v. p.* 8. *t.* 7. *f. b.*—Urceolaria Chilensis, Mol.—Feuill. *Chil. v.* iii. *t.* 43.—Conception, *Lay & Collie.* Maule Province, *Cuming*, (*N.* 829.) Provinces of Valdivia and Chiloe, *Bridges*, (*N.* 740.)

670. (1) Mitraria *coccinea*, Cav. *Ic. v.* 6. *t.* 379.—Climbing upon trees and shrubs, Chiloe, *Cuming*, (*N.* 54.) Near Valdivia, *Bridges*, (*N.* 586.)

671. (1.) Gesneria *allagophylla*, Martius, *Gen. et Sp. Bras. v.* iii. *p.* 36.—Boggy ground, near Maldonado, *Tweedie*, (*N.* 797,) also at Portalagre, S. Brazil.

672. (2) Gesneria *latifolia*, Mart. *in Verh. Berl. Gart. Gesellsch. v.* v. *p.* 218. *t.* 1. Ejusd. *in Gen. et Sp. Bras. v.* iii. *p.* 34. —Rocky places of Rio Grande, and St. Catherine in S. Brazil, *Tweedie*, (*N.* 789.)—The *G. macrostachya* of Prof. Lindley (*Bot. Reg. t.* 1202) is very similar to this in the leaves and flowers, but it has a much longer panicle: it is probably only a more luxuriant state, owing to cultivation.

673. (3) Gesneria *stricta* (Hook. & Arn.); hirsuta subtomentosa, foliis verticillatis ternis oblongis sessilibus arcte crenatis subtus pallidioribus, floribus remote verticillatis in racemum valde elongatum dispositis, corollæ hirsutæ tubo curvato labio superiore elongato, staminibus exsertis.—Rio Grande of S. Brazil, *Tweedie.*—This appears, from the solitary specimen we possess, to be a remarkably erect, and stiff growing plant. The leaves are small, the largest (on our plant) scarcely more than two inches long, almost velvety. Flowers smaller than in *G. bulbosa*, more hairy, with a much shorter upper lip.

674. (1) Hypocyrta (Sect. Oncogastra, *Mart.*) *villosa* (Hook. & Arn.); caule superne villoso, foliis ovato-lanceolatis petiolatis strigosis (pilis bipartitis) integerrimis subtus pallidioribus, floribus axillaribus aggregatis brevi-pedunculatis nutantibus, calyce corollaque longe pilosis.—St. Catherine, S. Brazil. *Tweedie.*

675. (2) Gaylussaccia *imbricata*, Pohl, *Pl. Bras. Ic. v.* ii. 40.

t. 126.—G. buxifolia, Schlecht. *in Linnæa, v.* i. *p.* 528 (not H. & K., according to Pohl.)—Elevated rocky mountains, near St. Catherine, S. Brazil. *Tweedie,* (*n.* 522.) *Mr. Macrae.*—This is a most beautiful species, with copious bright flowers nestled amongst the glossy evergreen foliage. Our specimens are sometimes a little downy, on the young branches and on the underside of the leaves, and the latter vary in their form, so that some of them seem identical with G. *pulchra,* Pohl, (*l. c. t.* 127.) which we fear is only a variety. We have received the same species from Dr. Von Martius under the name of "*Andromeda coccinea.*"

676. (1) Gaultheria *furiens.*—Arbutus furiens, Hook. & Arn. *in Bot. of Beech. Voy. v.* i. *p.* 33. Qued-qued. Feuill. *Chil. v.* iii. *p.* 56. *t.* 43.—Conception, *Lay & Collie.* Moist woods near Valdivia, *Bridges,* (*n.* 563.)

677. (2) Gaultheria *punctata.*—Arbutus punctata, Hook. & Arn. *in Bot of Beech. Voy. v.* i. *p.* 33.—Conception, *Lay & Collie.*—This differs from G. *furiens,* chiefly in the narrower leaves and much longer racemes, and should perhaps be united with it.

678. (3) Gaultheria *mucronata,* Hook. & Arn.—Arbutus mucronata, Linn. fil.—Hook. *Bot. Mag. t.* 3093.—Juan Fernandez, *Mrs. Graham; Douglas; Dr. Scouler.* Chiloe, *Cuming,* (*n.* 51.) Sandy places near Valdivia, *Bridges,* (*n.* 564.) β. *mutica;* foliis latioribus obtusis obtuse mucronatis. Juan Fernandez, *Mrs. Graham; Dr. Scouler.*—Gaudichaud is inclined to refer this plant to his *Pernettia,* which indeed seems to us to be identical with *Gaultheria* as defined by Mr. Brown.

679. (4) Gaultheria *myrtilloides* (Hook. & Arn.); fruticosa, foliis elliptico-lanceolatis acutis leviter serratis rigidis supra nitidis, pedunculis axillaribus solitariis unifloris bracteatis folium subæquantibus, calycibus demum carnosis.—α. *minor;* foliis mucronatis pedunculum æquantibus. Moist places near Valdivia and in the island of Chiloe, *Bridges,* (*n.* 565.)—β. *major;* foliis longioribus minus mucronatis pedunculum superantibus. Ravines between Valdivia and

Osorno, *Bridges*, (*n.* 566.)—This species certainly approaches the *G. mucronata;* but is smaller in every part with much narrower leaves. Our second var. is in fruit and has the lower half of the calyx remarkably fleshy.

680. (1) Symplocos *tinctoria*, L'Hérit.—Hopea tinctoria. L.—Frequent in woods of Rio Grande, *Tweedie*, (*n.* 35.)—We cannot distinguish this as a species from the North American plant of the same name.

681. (1) Styrax *acuminatum*, Pohl, *Pl. Bras. Ic. p.* 58. *t.* 138.—St. Catherine, S. Brazil, *Tweedie*, (*n.* 7.)

682. (2) Styrax *leprosum* (Hook. & Arn.); ubique squamulis nitidis leprosum (pagina superiore foliorum excepta), foliis ovato-ellipticis obtusiusculis integerrimis, racemis axillaribus, floribus secundis, calyce hemisphærico capsula elliptica triplo breviore.—Portalagre, *Tweedie*, (*n.* 12.)—We have seen no flowers of this plant, but its habit and the structure of the fruit are quite those of the present Genus. It is a solitary instance, we believe, of the presence of leprous scales (as in *Elæagnus*); which take the place of the stellated pubescence of the other known species.

683. (1) Lucuma *neriifolia* (Hook. & Arn.) foliis elongato-lanceolatis basi attenuatis glaberrimis brevi-petiolatis coriaceis, floribus tetrandris aggregatis brevi-pedunculatis erectis, corolla tubulosa calyce duplo longiori, filamentis elongatis basi curvatis.—Banks of the Uraguay, Parana and Rio Grande, called by the natives Mato de Ochos, *Tweedie*, (*n.* 108.)—In this remarkable species the tube of the corolla is much elongated, the scales (or abortive stamens) being nearly equal in length with the segments of the corolla and like them very obtuse. The filaments are of the same length and are bent at the base just above the point of insertion: Anthers very small.

684. (2) Lucuma *obovata*, Humb. et Kunth, *Nov. Gen. v.* iii. *p.* 241.—Achras Lucuma, R. & P. *Fl. Per. v.* iii. *t.*

239.—Lucuma Valparadisæa. Mol.—Ravines called Quebradas de las Lucumas, near Valparaiso, *Bridges*, (*n.* 259.); *Mathews*, (*n.* 322.) *Cuming*, (*n.* 718.)

685. (1) Citronella *mucronata*, Don *in Ed. N. Phil. Journ. Oct.* 1832. *p* .243.—Villaresia mucronata, *R. & P. Fl. Per. v.* iii. *p.* 9. *t.* 231. *f. b.* Adr. de Juss. *in Ann. des Sc. Nat. v.* xxv. *p.* 14. *t.* 3. *f.* 2.—Citrus Chilensis. Mol. *Chil.*—Valparaiso, *Cuming*, (*n.* 556.)

686. (1) Myrsine *Rapanea*, Br.—*Sieber Herb. Trinit. n.* 49. *Spreng. Syst. Veget. v.* i. *p.* 663.—Manglilla, *Juss.*—*α. major;* foliis majoribus subtus concoloribus.—Woods of Rio Grande, and the Uraguay, *Tweedie*, (*n.* 749.)—*β. minor;* foliis minoribus subtus pallidioribus. Along with *α. Tweedie* (*n.* 748.)—These two, with some other varieties, mentioned by Mr. Tweedie, chiefly differing in the size and more or less coriaceous texture of the leaves, seem to abound in the forests of Rio Grande, and are known by the name of Canella. The wood is said to be excellent. The species must have a very extensive range. We have specimens from Trinidad; it is the *Rapanea Guianensis* of Aublet; and it has been found as far south as Monte Video. We scarcely see how it is to be distinguished from the *M. Manglilla* of Peru. Again, the *Myrsine lanceolata* of Wallich, Cat. *n.* 2297, from Silhet, very nearly accords with our plant; but the flowers seem different: and even the *M. capitellata* of the E. Indies, figured in the *Bot. Mag. t.* 3222, agrees in many points with this, especially in general aspect. Our plant has the leaves beautifully dotted beneath.

687. (2) Myrsine *marginata* (Hook. & Arn.); foliis breviter petiolatis ellipticis subcoriaceis nitidis parallelim venosis integerrimis basi acutis apice obtuse attenuatis margine tenui pellucido, floribus (parvis) axillaribus fasciculatis, pedunculis petioli longitudine, calyce corollæque basi pubescenti-ferrugineis.—Dry places of the Uraguay; and near Portalagre in S. Brazil, *Tweedie*, (*n.* 41. 52. & 53.)—Leaves an inch to an inch and a half long, beautifully marked with

fine closely placed pellucid veins, and a narrow pellucid line round the edge. It seems to be a shrub with slender branches.

688. (1) Linociera *glomerata*, Pohl, *Pl. Bras. Ic. v.* ii. *p.* 98. *t.* 164.—A large evergreen tree on the coast of Rio Grande. *Tweedie.*

689. (1) Bolivaria *integrifolia*, Cham. *in Linnæa, v.* i. *p.* 208. *t.* 4. *f.* 1.—Buenos Ayres, *Dr. Gillies.* At the Bochada on the Parana, *Tweedie.*

690. (2) Bolivaria *trifida*, Cham. *in Linnæa, v.* i. *p.* 209. Graham *in Ed. N. Phil. Journ,* 1830.—Buenos Ayres, *Dr. Gillies.* On the shore of La Plata at the mouth of the St. Lucie, *Tweedie,* (*n.* 449.) Plain of Mendoza, *Mr. Cruckshanks.*

691. (3) Bolivaria *decemfida* (Gill. *mss.*); valde ramosa, ramis erectis rigidis novellis angulatis, foliis erectis lineari-lanceolatis acutis integerrimis glabris, corolla calyce decemfido subtriplo longiore laciniis oblongo-lanceolatis, antheris linearibus.—Valleys of the Andes of Mendoza, *Dr. Gillies; Mr. Cruckshanks.*—A small shrub, with numerous erect harsh and rigid branches, somewhat like those of *Spartium radiatum.* Flowers much larger than in either of the preceding: and the segments of the calyx twice as long as the tube.

692. (1) Villarsia *Humboldtiana?* Kunth *Nov. Gen. v.* iii. *p.* 187.—Pools of water, Maldonado, Portalagre and Rio Grande, *Tweedie,* (*n.* 2. and 509.)—Leaves about 3 inches in diameter, somewhat coriaceous. Without the seeds, we cannot be certain of this being the *V. Humboldtiana.* We possess what we consider to be the same plant from Guiana and from Jamaica.

(The *Villarsia Chilensis* of Loddiges, *Bot. Cab. t.* 1994, is said to be a native of Chili, but we rather suspect the plant he has so called to be the *V. parnassifolia* of Labill., a native of New Holland.)

693. (1) Vohiria *aphylla*, Aubl.—Hook. *Bot. Misc. v.* i. *p.* 46. *t.* 25.—Wet places, entrance of La Goa de los Patos, *Tweedie.*

694. (1) Erythræa *Chilensis*, Pers.—Chironia Chilensis. Willd.—Gentiana Cachanlahuen. Mol.—G. Peruviana. Lam. —Feuill. *Chil. v.* ii. *t.* 35.—Chili, *Mr. Menzies. Dr. Gillies.* Valparaiso, *Cuming*, (*n.* 339.)—This is a well known medicinal plant of Chili, and seems to differ from the cultivated *E. Quitensis*, H. et K., only in the quinary, not quaternary, division of the flowers.

695. (2) Erythræa *uniflora* (Hook. & Arn.); annua, caule erecto simplicissimo unifloro gracili, foliis inferioribus lato-ellipticis superioribus linearibus omnibus obtusis glaberrimis trinerviis, calycis laciniis ovato-acuminatis margine membranaceis tubo corollæ brevioribus, laciniis corollinis 5 ellipticis obtusis.—Coast of La Plata near Monte Video, *Tweedie*, (*n.* 448.)—This may, perhaps, be referrible to the Genus *Schubleria*, Mart.

696. (1) Exacum *inflatum* (Hook. & Arn.); tenellum erectum ramosum, ramis erectis, foliis oblongo-lanceolatis acutis glabris, calyce inflato tetragono membranaceo acuto 4-dentato tubum corollæ æquante.—E. filiforme? Hook. & Arn. *in Bot. of Beech. Voy. v.* i. *p.* 34.—Conception, *Lay and Collie.* La Plasilla, near Valparaiso and Quissay, *Bridges*, (*n.* 196.)—Specimens of this plant more perfect than we possessed when we published the Chilian Botany of Captain Beechey's Voyage, have proved to us that it is a very distinct species from any hitherto described. Its flowers appear to be yellow. If it should prove to be the *E. Chilense* of Bertero, we trust that the French botanists who have alone the means of determining this point, will at once change the name. The calyx resembles that of the Genus *Helia*, Mart.

697. (1) Schultesia *crenuliflora*, Mart. *Nov. Gen. Bras. v.* ii. *t.* 130.—Meadows and wet springy grounds near the foot of the mountains of Rio Jacquy and at Rio Grande, *Tweedie*, (*n.* 254.)—This plant we have also received from Trinidad, gathered by Mr. Lockhart.

Megasiphon
?. longiflora Desf.

698. (1) Echites *grandiflora*, Desf. *Mem. du Mus. v.* v. *p.* 275. *t.* 20.—The segments of the corolla are æquilateral, in which respect and in the remarkably long tube this plant differs from most species of the Genus. Our specimens exhibit two remarkable varieties, in relation to which the plant of Desfontaines is exactly intermediate:—*α. major;* foliis late ovato-cordatis 1½ unciam longis unciam latis, corolla dense lanata. Gravelly soil, La Goa de los Patos, and near Portalagre, in rocky mountainous places, *Tweedie*, (*n.* 214.)—*β. minor;* foliis oblongis vix unciam longis 2—3 lineas latis, corolla minus lanata. Echites Lambertiana, Gill. *MSS.*—Near Rio Quarto, province of Cordova, *Dr. Gillies.* Coast of La Goa, Rio Uraguay and Portalagre, *Tweedie*, (*n.* 213.)—Pods a span long, torulose, downy.

Rhodocalyx

699. (2) Echites *coccinea* (Hook. & Arn.); erecta? radice tuberosa, foliis ellipticis glaberrimis basi obtusis apice acutis, pedunculo terminali, floribus corymbosis, pedicellis bracteatis, calycis laciniis profundis subulatis tubo corollæ duplo brevioribus, folliculis linearibus glabris.—Rocky places on the banks of the river Jacquy, S. Brazil, *Tweedie*, (*n.* 791.)—*β.* foliis latioribus subrotundo-ellipticis, floribus pallidioribus. (with *n.* 791.)—The flowers of this are about the size of those of the *Nerium Oleander*, and of a rich scarlet colour, visible at a great distance. The roots, Mr. Tweedie observes, bear 5 or 6 black tubers resembling potatoes.

[illegible]
[illegible] a. H.
n. 168.

700. (3) Echites *pubescens*, Hook. & Arn. *in Bot. of Beech. Voy.* v. i. *p.* 34.—Conception, *Lay and Collie.* Woods near Valdivia, frequent, *Bridges*, (*n.* 601.)—In Valdivia it is called by the name of "Boqui," a term applied to all climbers. The follicles are more than a span long, thicker than a goose-quill, torulose, and clothed with rusty down; sometimes 3 arise from the same calyx.

[illegible]

701. (4) Echites? *ovalifolia* (Hook. & Arn.); volubilis, foliis ovalibus subcoriaceis obtusis brevi-petiolatis supra glabris subtus pubescentibus venisque fuscis elevatis reticulatis, folliculis (biuncialibus) linearibus obtusissimis ferrugineo-pub-

escentibus sublignosis intus canaliculatis.—Woods in the province of Rio Grande, *Tweedie.* Laseguea

702. (1) Parsonsia? *bracteata* (Hook. & Arn.); volubilis, foliis cordato-ovatis acutis brevi-petiolatis supra glabris subtus cinereo-pubescentibus, racemis folio multo longioribus, squamis subulato-lanceolatis dense bracteatis, calyce profunde 5-partito corollam tubulosam subæquante, lobis corollinis æquilateris parvis erectis obtusis.—A strong climber, in the woods of Aldea of Rio Grande. *Tweedie,* (*n.* 88.)—This seems a very peculiar plant, with leaves 2—3 inches long, axillary racemes nearly a span in length, the flowers partly hidden by the long bracteas and almost equally long calycine segments which resemble the bracteas in form and texture. The limb of the corolla is tubular, and only cleft into 5 short erect lobes at the extremity. The stamens are firmly united into a cone which is included within the tubular limb: and the corolla is hairy within at the base. Hypogynous scales 5, surrounding the 2-lobed ovary. Lasegue

703. (2) Parsonsia *leptocarpa* (Hook. & Arn.); caule volubili pubescente, foliis brevi-petiolatis ovalibus obtusis membranaceis utrinque glabris, panicula densiflora subsessili terminali multibracteata, bracteis ovatis acutis parvis, corolla subrotata calycem vix duplo superante intus basi præcipue valde hirsuta laciniis lanceolatis, folliculis longissimis filiformibus.—Woods of Rio Grande, *Tweedie,* (*n.* 86.)—This, Mr. Tweedie observes, climbs to the tops of the highest trees, often destroying them, and is rendered conspicuous by the numerous slender pods (not thicker than a sparrow's quill) one to two feet in length. The flowers are very small, scarcely more than a line in diameter, with an exceedingly short limb. Stamens inserted among the copious hairs near the base; filaments short; anthers linear, slightly cohering, appendiculated at the top. Ovary surrounded by 5 erect scales. Stigma not much dilated.

704. (1) Oxypetalum *Banksii,* Roem. and Sch. *Syst.*

Veget. *v.* vi. *p.* 91. Mart. *Nov. Gen.* *v.* i. *p.* 48. *t.* 29.—Plentiful in the woods of St. Catharine, *Tweedie.*

In this as well as in all the following species, the apex of the retinaculum is destitute of any appendage.

705. (2) Oxypetalum *Wightianum* (Hook. & Arn.); caule volubili, foliis cordato-oblongis breviter acuminatis subtus leviter pubescentibus, pedunculis brevi-pedunculatis corymbosis paucifloris, corollæ laciniis lineari-subulatis reflexis, coronæ foliolis lato-cuneatis superne membranaceis, apice obtusissimo reflexo, basi intus squamula aucta, stylo sublonge exserto cruribus brevibus.—Hedges near Portalagre, rare, *Tweedie, n.* 227.—Follicle muricated. Allied to this and to the preceding is the "*Apoc. maritimum. Bahia; in maritimis,*" of Salzmann's *Herb. Brasil.*; which may be thus defined:—Oxypetalum *maritimum* (Hook. & Arn.); caule volubili glabriusculo, foliis ovali-cordatis acuminulatis subtus obsolete pubescentibus, pedunculis folio longioribus laxe corymbosis plurifloris, corollæ laciniis lineari-acuminatis reflexis, coronæ foliolis subrotundis retusis intus margineque subpapillosis, stylo vix exserto.

706. (3) Oxypetalum *tomentosum* (Wight, *Mss.*); volubile ubique dense pubescenti-tomentosum, foliis ovali-cordatis acuminulatis, pedunculis folio brevioribus corymbosis paucifloris, corollæ foliolis patentibus lineari-acuminatis, coronæ laciniis ovatis obtusis intus basi squamula lata auctis, stylo longe exserto cruribus elongatis.—Dry sandy coast of Maldonado, *Tweedie,* (*n.* 212.)—What we have here called the corona is not attached to the staminal column, but arises from the tube of the corolla, though not quite so high up as in *Tweedia.*

707. (4) Oxypetalum *crispum* (Wight, *Mss.*); volubile pubescenti-tomentosum, foliis oblongo-cordatis acutissimis margine crispatis, pedunculis folio longioribus umbellato-corymbosis multifloris, corollæ laciniis lineari-acuminatis, stylo elongato cruribus breviusculis angustissimis.

708. (5) Oxypetalum *capitatum* (Hook. & Arn.); volu-

bile? foliis oblongis acutis vix basi cordatis marginibus magis minusve crispatis, pedunculis terminalibus (et ex axilla suprema) folio longioribus corymboso-capitatis valde hirsutis, corollæ laciniis ovato-lanceolatis patentibus, coronæ foliolis oblongis obtusissimis carnosis intus basi squamula auctis, stylo crasso subexserto apice obscure bifido.—Dry plains of Entre Rios, and on mountains in the Banda Orientale, *Tweedie.*—This has almost the appearance of being an erect plant, but with long branches and the leaves in distant pairs. Besides the terminal peduncle, there is one from the axil of the upper leaves.

709. (6) Oxypetalum *solanoides* (Hook. et Arn.); erectum tomentosum, foliis oblongo-cordatis acutis sinu profundo, panicula terminali subcorymbosa pluriflora, corollæ laciniis ovato-acuminatis patentibus, corona foliolis longe exsertis lineari-oblongis bifidis stylum longiusculum bifidum æquantibus columnam stamineam minutam multoties superantibus.—Plains of Buenos Ayres, *Tweedie.*

710. (7) Oxypetalum *microphyllum* (Hook. & Arn.); procumbens gracile, foliis cordato-oblongis subsessilibus pubescenti-scabre acutiusculis, pedunculis brevissimis 1—3-floris, corollæ laciniis lanceolato-acuminatis erecto-patentibus, coronæ foliolis cordato-oblongis profunde bifidis stylum bifidum breviusculum æquantibus.—Mountains of Rio Jacquy near Port Alegre. *Tweedie*, (*n.* 225.)—A dwarf plant, 6—10 inches long. Leaves ½ an inch long, exceeding the flowers in length.

711. (8) Oxypetalum *molle* (Hook. & Arn.); volubile, foliis elliptico-cordatis acutis supra hirtis subtus tomentosis, pedunculis axillaribus subunifloris hirsutissimis, corollæ laciniis lato-lanceolatis patentibus extus tomentosis, coronæ foliolis obovatis subcrenulatis intus basi squamosis, squamula superne in appendiculam elongatam apice solummodo libero producta, stylo exserto bifido.—St. Catharine, *Tweedie*, (*n.* 231.)—Leaves 2—4 inches long, 1—2 inches broad, beneath, as well as the stem, peduncles and outside of the flowers, densely clothed with soft woolly hairs. We possess

a species from Parahuanca (*Mathews*, *N.* 1159,) in Peru, very nearly allied to this, but differing in the acuminated leaves and the inside of the corolla being thickly clothed with hairs.

Sarcostemma (PHILIBERTIA.) *H. & K.* (*Char. reformato.*)

Calyx 5-partitus. *Corolla* urceolato-rotata, sinuato-quinqueloba, *lobis* acutis denticulis interjectis; *tubus* brevis, mediante toro carnoso apice quandoque annuliformi et undulato gynostegii (columnæ stamineæ, *Br.*) basi adnatus. *Corona staminea* simplex, 5-phylla: foliolis carnosis summo gynostegio insertis, integris. *Antheræ* membrana terminatæ. *Massæ pollinis* clavato-cylindraceæ, ad apicem fere affixæ. *Stigma* brevissimum vel breviter rostratum apice biapiculatum.—Frutices *volubiles.* Folia *opposita, basi cordata.* Umbellæ *interpetiolares.*

711. (1) Philibertia *Gilliesii* (Hook. & Arn.); foliis glabriusculis vel parce pubescentibus, floribus dense pubescentibus, toro gynostegium cingente apice sinuato-5-lobo, coronæ stamineæ foliolis ovatis rostrato-acuminatis antheras æquantibus, stigmate breviter rostrato.—On trees and bushes, uncultivated places, near Mendoza. *Dr. Gillies.* Uraguay, *Tweedie.*

712. (1) Diplolepis *Menziesii.* Roem. & Sch. *Syst. Veget. v.* vi. *p.* 95.—Valparaiso. *Mr. Menzies. Mr. Cruckshanks. Bridges. Cuming,* (*N.* 780.)—Volubilis, ramosus, glaberrimus. Folia unciam et sesquiunciam longa, coriacea, oblongo-lanceolata margine revoluta, cuspidato-acuta, supra atro-viridia, penninervia nervis depressis, subtus pallidiora, flavo-virescentia nervis prominentibus; petiolus vix lineam longus. Corymbi pauciflori foliis subbreviores. Flores majusculi. Calycis foliola ovato-lanceolata, corollæ tubo subbreviora. Corolla brevi-campanulata, limbi laciniis elongatis valde acuminatis, spiraliter tortis, supra pubescentibus. Stigma valde elongatum, filiforme, integrum.

BRACHYLEPIS. (Nov. Gen.) *Hook. & Arn.*

Cal. 5-partitus. *Corolla* rotata tubo brevissimo, limbi laciniis patentissimis lanceolatis acutis. *Squamæ* 5 brevissimæ, obtusæ, integerrimæ, erectæ, ad basin gynostegii. *Antheræ* membrana terminatæ. *Massæ pollinis* clavato-cylindraceæ, pendulæ. *Stigma* elongatum, subfiliforme, apice bifidum.—Frutices *subvolubiles undique læviter pubescentes.* Folia *membranacea, cordata, acuta, basi profunde biloba.* Pedunculi *axillares folio longiores, corymbosi.* Corymbi *pauci-*(4—6) *flori.* Flores *parvi, ut videtur, ochroleuci.*

713. (1) Brachylepis *Candolleanus.*—Cynanchum Candolleanum. Gill. *MSS.*—On bushes and trees in the valleys and uncultivated places in the province of Mendoza. Along the fort of Ceno Grande, Uspallata. *Dr. Gillies.*

Tweedia. (Nov. Gen.) *Hook. & Arn.*

Calyx 5-partitus. *Corolla* campanulata, quinquefida, laciniis acuminatis, fauce coronata, squamis 5 carnosis retusis vel bifidis, exsertis, sinubus oppositis. *Corona staminea* nulla. *Antheræ* membrana terminatæ. *Massæ pollinis* ventricosæ, apice attenuato affixæ, pendulæ. *Stigma* elongato-acuminatum, bipartitum.—Suffrutices *volubiles.* Folia *opposita membranacea.* Umbellæ *axillares.* Flores *majusculi.*

This genus is allied in some points to *Metastelma,* but is readily distinguished by the long bifid acumination of the stigma, the form of the corolla, with its narrow segments, and the scales which crown the throat, which are not mere tooth-like processes, but large, obtuse and fleshy. The Genus is dedicated to Mr. Tweedie, whose botanical researches have greatly extended our knowledge of Extratropical South-American plants. *Wight, MSS.*

714. (1) Tweedia *birostrata.* Hook. & Arn.—Cynanchum birostratum. Hook. & Arn. *in Bot. of Beech. Voy. v.* i. *p.* 35. —Valparaiso. *Mr. Cruckshanks. Bridges,* (*N.* 160.) *Cuming,* (*N.* 520.) *Mathews,* (*N.* 194.) Conception, *Lay & Collie.*

715. (2) Tweedia *macrolepis* (Hook. & Arn.); caule volubili pubescente, foliis subcoriaceis oblongis acutissimis glabris basi cordatis ciliatis, umbellis pedunculatis pubescenti-hirsutis densifloris, floribus majusculis, squamis valde carnosis

exsertis, corollis intus glabris extus hirsutis.—Rough grassy places beside springs, at Via Monte, on the Rio Grande, *Tweedie*, (*n.* 226.)

716. (3) Tweedia? ***Brunonis*** (Hook. & Arn.); gracilis canescens, caule filiformi, foliis lineari-filiformibus angustis mucronato-acutis, umbellis paucifloris brevi-pedunculatis folio multo brevioribus, squamis corollinis exsertis bilobis pubescentibus, stigmate acuminato triquetro indiviso.—Cynanchum Brunonis, Gill. *MSS.*—On bushes in valleys and uncultivated places in the province of Mendoza. *Dr. Gillies.* —This will probaby constitute a distinct Genus, having the scales of *Tweedia*, but an undivided stigma.

SCHISTOGYNE. (Nov. Gen.) *Hook. & Arn.*

Calyx 5-partitus. *Corolla* rotato-campanulata, intus villosa, limbi 5-partiti laciniis elongatis acuminatis, nullis accessoriis interjectis. *Columna* semi-inclusa. *Corona* staminea ad basin tubi filamentorum inserta, 5-phylla, foliolis (seu squamis) oblongis, obtusis, membranaceis, indivisis, intus edentulis. *Antheræ* membrana terminatæ. *Massæ pollinis* ventricosæ, ovatæ, infra apicem affixæ. *Corpuscula* linearia longa. *Stigma* sub-7-partitum (!), segmentis subulato-filiformibus.

716. (1) Schistogyne ***sylvestris***, (Hook. & Arn.)—Frequent on the Uraguay and about Entre Rios. *Tweedie*, (*n.* 219.) Banda Orientale. *Mr. Baird.*—A small twining glabrous shrub, with ovate or ovato-oblong, acute leaves, somewhat cordate at the base. Corymbs umbellate, pedunculate, shorter than the leaves.—At once distinguished by the multifid stigmas.

717. (1) Physianthus ***albens***. Mart. *Nov. Gen. Bras. v.* i. *t.* 32. Hook. *Bot. Mag. t.* 3201.—Dry woods about Buenos Ayres, *Dr. Gillies*, and in the Uraguay, *Tweedie*, (*n.* 228.)

718. (2) Physianthus ***angustifolius*** (Hook. & Arn.); foliis anguste lanceolato-hastatis acuminatis concoloribus lobis transversalibus oblongis obtusissimis, corollis rotato-campanulatis, stigmatibus exsertis.—Plentiful in the Missions of South Brazil. *Tweedie*, (*N.* 218.)—This is a true ***Physianthus***,

with very differently shaped leaves from the preceding, not at all white beneath, and a differently formed corolla.

718. (1) Cynanchum *nummulariæfolium* (Hook. & Arn.); lævissime pubescens, foliis rotundatis obtusis retusisve cum mucrone marginibus anguste revolutis, cymis paucifloris subsessilibus, corolla subcampanulata, corona monophylla 5-loba lobis rotundatis antheris oppositis, stigmate apiculo bifido.—Cordilleras of Chili. *Cuming*, (*N.* 276.) Sierra Bella Vista, Aconcaja. *Bridges*, (*n.* 161.)—This is readily distinguished by its copious, roundish, subcoriaceous, pale yellow-green leaves.

Cynoctonum

719. (2) Cynanchum *myrtifolium* (Hook. & Arn.); subpubescens, foliis ellipticis seu elliptico-ovatis obtusiusculis, cymis paucifloris subsessilibus, corolla subcampanulata, corona membranacea cupuliformi subplicata vix lobata ore truncato gynostegium æquante corolla duplo breviore laciniis carinisve interioribus nullis, stigmate apiculo bifido.—Near Osorno, Chili; growing among bushes, rare. *Bridges*, (*N.* 599.)

Cynoctonum

720. (3) Cynanchum *cuspidatum* (Hook. & Arn.); glabrum, foliis ellipticis basi acutis apice cuspidatis, cymis sessilibus multifloris, corolla subcampanulata intus pubescente, corona pentaphylla foliolis lineari-lanceolatis gynostegio longioribus.—Plentiful in the woods of La Goa, S. Brazil. *Tweedie*, (*n.* 221.)

Metastelma

721. (4) Cynanchum *diffusum* (Hook. & Arn.); glabriusculum, foliis (paucis parvis) lato-lanceolatis cuspidatis, ramis floriferis subaphyllis, cymis subsessilibus 3—8-floris, corolla subrotata glabra, corona pentaphylla foliolis lineari-acuminatis gynostegio longioribus.—Ionidium diffusum. Gill. *in Bot. Misc. v.* iii. *p.* 145.—About Buenos Ayres, *Dr. Gillies*, and frequent there upon the hedges of *Cactus. Tweedie*, (*n.* 220.)—When this plant was referred to *Ionidium*, its flowers were unknown to Dr. Gillies. We now possess copious flowering specimens, which are remarkable for the almost entire failure of leaves upon those numerous branches which bear the blossoms, giving the plant a very naked appearance.

oxypetalum 722. (5) Cynanchum *lancifolium* (Hook. & Arn.); subpubescens, foliis lanceolato-acuminatis basi obtusis, cymis multifloris pubescentibus pedunculatis folio multo brevioribus, corolla rotato-campanulata, corona tubulosa gynostegii longitudine membranacea 5-fida lobis retusis, stigmate apiculato bifido.—Between Osorno and "Rio de Maullen," Chili. *Bridges*, (*n.* 600.)—This is a very fine species, with leaves 3—4 inches long, and with many-flowered moderately large drooping cymes.

Roulinia 723. (4) Cynanchum *tamifolium* (Hook. & Arn.); glabrum, foliis cordatis amplis sublonge petiolatis, cymis pedunculatis plurifloris, corolla rotata laciniis demum reflexis, corona profunde 5-partita columna subduplo longiore, laciniis rotundatis apiculo lato acuminatis.—*α. major*; foliis acuminatis.—Woods about Rio Pardo, Rio Grande and Maldonado in S. Brazil. *Tweedie*, (*n.* 267.)—*β. minor*; foliis obtusiusculis cum acumine brevi.—Hedges and woods at Port Alegre. *Tweedie.*

Morrenia 723. (5) Cynanchum *odoratum* (Hook. & Arn.); incanum, foliis hastato-trilobis, cymis subsessilibus, floribus (magnis) extus incanis, corolla rotata, corona tubulosa columnam includente alte 5-lobata intus hirsuta lobis lato-linearibus apice emarginatis subcartilagineo-plicatis dentibus minutis interjectis.—"Old dykes about Buenos Ayres. Flowers green and remarkably fragrant, particularly in damp evenings." *Tweedie.*—Leaves 2—3 inches, and petiole about an inch in length.

Cynoctonum 724. (6) Cynanchum *Boerhavifolium* (Hook. & Arn.); foliis (parvis) rotundato-cordatis obtusis cum mucrone marginibus anguste revolutis, cymis pedunculatis 3—6-floris folium æquantibus, corolla rotata, corona exserta monophylla tubulosa columnam includente 5-fida lobis plicato-3-dentatis dente intermedio elongato.—Coquimbo. *Cuming*, (*n.* 891.)

Roulinia 724. (7?) Cynanchum? *connivens* (Hook. & Arn.); glabrum, foliis ovato-cordatis subcoriaceis mucronato-acutis, cymis pedunculatis plurifloris, corolla rotata, laciniis lineari-acuminatis incurvato-conniventibus tortilibus margine revolutis, corona pentaphylla summo tubo filamentorum imposita, foliolis membranaceis lingulatis simplicibus obtusis integerrimis, stigmate mutico.—Woods of the isle of "Los Dos Maranheros," S. Brazil. *Tweedie*, (*n.* 216.)—Flowers small, with very long singularly incurved laciniæ to the corolla.

725. (8?) Cynanchum? *Macræi* (Hook. & Arn.); sub- Astephanus pilosum, foliis (parvis) oblongis acutis brevi-petiolatis pedunculis subbifloris folio brevioribus, corolla urceolato-campanulata 5-fida intus basi hirsuta, laciniis obtusis apicibus recurvis, corona brevissima ad basin columnæ inserta 5-loba, filamentis dorso uniglandulosis.—Cordillera of Chili. *Macrae.*

726. (1) Asclepias *citrifolia.* Jacq. *Ic. Rar. v.* ii. *p.* 343. *α.* Dry places, Banda Orientale. *Tweedie*, (*n.* 229 and 330.)—*β*? foliis latioribus. Asclepias Lindleyi. Gill. *MSS.*—tilin Lech tresma, *Nom. vern.* Cerro del Morro, province of San Louis, *Dr. Gillies.* This state of the plant we possess only with the fruit.—*γ.*? *angustifolia;* foliis lanceolatis longe acuminatis. Pampas of Buenos Ayres. *Dr. Gillies. Tweedie.*—This var., as we are disposed to consider it, has very long narrow leaves. It approaches *A. Mexicana*, Cav.; but differs in having axillary as well as terminal peduncles, which, moreover, are more than half as long as the leaves. The flowers are smaller than in *α.*

727. (1) Gonolobus *hispidus* (Hook. & Arn.); foliis cordato-ovatis acutis nervis caule petiolis pedunculisque hispidissimo-hirsutis, pedunculo 1—2-floro.—Growing luxuriantly in very dry situations among withered grass at Entre Rios. *Tweedie.*—The pod (or follicle) is described by Mr. Tweedie as being very large, resembling a toad, and it is eaten by the natives.

728. (1) Ditassa? *Burchellii* (Hook. & Arn.); foliis ovalibus mucronatis ramulorum multo minoribus, pedunculis hirsutis brevibus 1—3-floris, corolla subrotata, corona duplici, ext. membranacea 5-partita laciniis apice bifidis, int. breviore 5-phylla laciniis linearibus crassiusculis exteriori antherisque oppositis, stigmate mutico.—Woods, Rio Grande, where it climbs to a great height on trees and bushes. *Tweedie*,

(*n.* 224.)—This differs from *Ditassa* chiefly in the bifid outer coronal laciniæ of the flowers.

729 (1) Sarcostemma *Bonariense* (Hook. & Arn.); ramis inarticulatis pedunculoque glabris, foliis lineari-oblongis basi obtusis apice in cuspidem subiter attenuatis subtus ad costam præcipue puberulis, pedicellis calyce corollaque sericeo-pubescentibus.—Buenos Ayres. *Tweedie.*—Peduncles equal in length with the leaf. Stigma apiculate, apiculus emarginate. Outer corona small, annuliform and entire. Nearly allied to *S. pubescens* and *S. Cumanense*, H. B. K.—"This with the other S. American species scarcely agree with the true *Sarcostemma* in the form and origin of the exterior corona which in this is only an elevated margin to the tube of the corolla, while in the true *Sarcostemma* it is distinct from the corolla. In other respects, save in the emarginate stigma of our plant, they all accord in generic structure." *Wight, MSS.*

(*To be continued.*) 29

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(TAB. CXXXVIII.—CXXXIX.)

ALGOLOGICAL ILLUSTRATIONS.

By WILLIAM H. HARVEY, ESQ.

No. I.—REMARKS ON SOME BRITISH ALGÆ, AND DESCRIPTIONS OF NEW SPECIES RECENTLY ADDED TO OUR FLORA.

LAMINARIEÆ. *Grev.*

1. Laminaria debilis. *Ag. Syst. v.* i. *p.* 120. *Grev. Scot. Crypt. Fl. t.* 277. *Grev. Alg. Brit. p.* 35. *t.* 5. *Hook. Brit. Fl. v.* ii. *p.* 272. *Chalmers, Alg. Scot. N.* 39.

This supposed species of *Laminaria* was introduced to the British Flora by Mr. James Chalmers, who published specimens gathered in the Island of Islay in his "Algæ Scoticæ;" and it has since been admirably figured in Dr. Greville's "Scottish Cryptogamic Flora." No one appears to have detected it in any other locality: although a plant agreeing in shape, size and colour, but hitherto supposed to have a different structure, occurs on many of our shores, being found in Devonshire by Mrs. Griffiths, near Belfast by Dr. Drummond, and in the West of Ireland by myself. This is the *Punctaria latifolia* of the "Algæ Britannicæ;" and Dr. Greville admits, that, "in its outline and general appearance, it resembles *Laminaria debilis*, which as well as the two following species of *Punctaria*, Sprengel has referred to his *Zonaria plantaginea*, an association which proves him to have generalized without much examination."

Under *Laminaria debilis*, he further observes:—"Sprengel has not admitted this plant as a species into his Species Plantarum, but refers it as a synonym to *Zonaria plantaginea* of Agardh, the *Punctaria plantaginea* of this work. It is nevertheless not only perfectly distinct, but has no affinity whatever with the genus *Punctaria*."

With opinions against me thus strongly expressed by so high an authority as my friend Dr. Greville, I fear I shall be thought presumptuous in stating my conviction that however distinct the three reputed species of *Punctaria* may be among themselves, (a point I leave for future observation) the *Laminaria debilis* is completely identical with *Punctaria latifolia*.

I trust I have not come to this conclusion hastily or without a minute examination and comparison of authentic specimens of both species—those of *L. debilis* gathered at Islay by Mr. Chalmers and given to me by Mr. Arnott, and those of *P. latifolia*, by Mrs. Griffiths from Devonshire. It was Mrs. Griffiths indeed who first called my attention to the subject, by remarking that specimens from Chalmers which I had sent her, were the same as her *P. latifolia*: and I find that.

Chalmers himself expresses a doubt of his *L. debilis* proving any thing else than a more advanced state of *P. plantaginea.*

In form, size, substance and colour, it is allowed that the Islay and Devonshire plants perfectly agree; but it is asserted that the former have the closely cellular structure of *Laminaria*, the latter the reticulated or *dictyoteous* structure of *Punctaria.* This dissimilarity I have not been able to discover, for though I have subjected both to a rigid microscopic examination and dissection, I cannot perceive the most trivial structural character to distinguish them. Both are truly *dictyoteous* and entirely the same in genus and species: I cannot even detect sufficient differences to establish a variety.

I trust Dr. Greville's specific name "*latifolia*" will be retained for the united species; for though "*debilis*" has undoubtedly the claim of priority, and was quite applicable to the plant whilst considered a *Laminaria*, it would be rather too absurd, for the mere sake of preserving an older name, to attach such an epithet to the largest and finest species of *Punctaria.*

DICTYOTEÆ.

2. Striaria *attenuata.* Grev.—*Hook. Br. Fl. v.* ii. *p.* 279. &c.—To the habitats already given in British Flora, add Torbay, *Mrs. Griffiths*—and Sidmouth, *Miss Cutler.* 1833.

3. Asperococcus *castaneus*, Carm.—*Hook. Br. Fl. v.* ii. *p.* 277. Mrs. Griffiths has sent me a series of specimens which prove that this supposed species is only the young state of *Chorda lomentaria.*

ECTOCARPEÆ.

4. Sphacelaria *disticha.*—*Harv. in Hook. Br. Fl. v.* ii. *p.* 323. Since the publication of the British Flora, my friends Mrs. Griffiths and Miss Cutler have convinced me that the plant I formerly described under this name is merely a form of *S. scoparia.* The latter lady, who finds both states commonly at Sidmouth, has kindly communicated an extensive

series gathered at different seasons, by which it appears that the form called "*disticha*," is most abundant during the autumnal and winter months, though it is occasionally found in summer.

Whether the *S. disticha* of Lyngbye and Agardh be really distinct, I have no means of ascertaining, never having seen an authentic specimen.

5. Ectocarpus *Mertensii.* Ag.—*Harv. in Hook. Br. Fl. v.* ii. *p.* 327.

This most beautiful as well as very rare and little known plant has recently been added to the Devonshire Flora by *Mrs. Griffiths*, and *Mrs. Wyatt*, who gathered it at Tor Abbey and Harbrich in April of the present year (1834,) and *Miss Cutler* has since detected it at Sidmouth. Thus within a few weeks three new stations have been ascertained for this most interesting species,—a species indeed long known to botanists by the figure in "English Botany" (*t.* 999), but, until now, existing in very few herbaria. It may confidently be expected to occur in many other places on the Southern shores of England: and as good specimens will I hope be published in the 3d vol. of the "Algæ Danmonienses," it will soon cease to be a little known plant. I regret that I cannot yet claim *E. Mertensii* as a native of Ireland. Bantry Bay is indeed given as a station on the authority of the late Miss Hutchins, but her specimens which, through the kindness of Mr. Mackay, I have lately had access to, belong to *E. granulosus* and *E. spermophorus.*

MYRIOTRICHIA. *Nov. Gen.*

(*Alga minuta, parasitica. Frons diorgana, ex filis articulatis, quorum alia olivacea opaca, alia hyalina crinoidea constans.*)

Gen. Char.—Filum primarium olivaceum flaccidum (simplex), ramulis setiformibus quadrifariis obtusis obsessum, quorum apicibus filamenta crinoidea hyalina dichotoma

longè articulata enascuntur. *Fructus* capsulæ ovatæ glomerulum olivaceum includentes.

6. Myriotrichia *clavæformis. Harv. MSS.*—(Tab. CXXXVIII.)

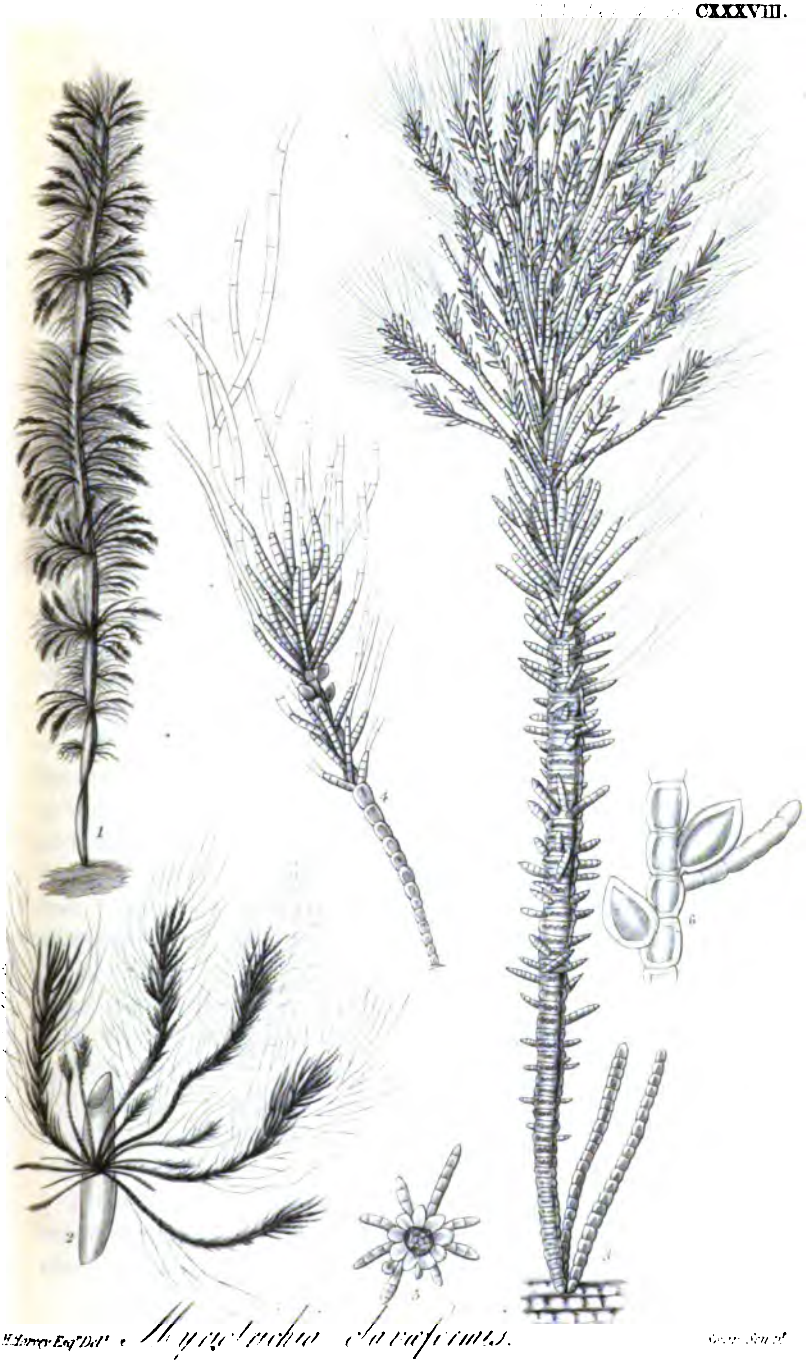
Radix callus exiguus, parasiticus. *Frondes* ex una basi plurimæ, fasciculatæ, semi-unciales, tenuæ, flaccidæ, subgelatinosæ, simplices, lineari-clavatæ, olivaceæ, filis hyalinis tenuissimis circumdatæ. *Filum primarium* totam frondem percurrens, simplex, basi attenuatum, articulatum, infra nudum, apicem versus ramulis vestitum. *Ramuli* sparsi quadrifarii vel verticillati, obtusi, *inferiores* breves nudi, *superiores* (sicut *filum primarium*) ramusculis ornati, apice *filamenta* tenuissima hyalina dichotoma longè articulata ferentes, quæ sæpe in frondibus provectioribus maxime implexa sunt. *Articuli: fili primarii* brevissimi, geniculis contractis, transversim punctato-fasciati, punctis proliferis, quæ demum in ramulos producuntur; *ramulorum* oblongiusculi, geniculis hyalinis. *Capsulæ* sessiles, ellipticæ vel ovatæ, limbo pellucido cinctæ, glomerulum *seminum* olivacearum includentes. Chartæ arctè adhæret.

Discovered by *Mrs. Griffiths* in August 1833, at the "Bathing Cove, Torquay," growing parasitically on *Chorda lomentaria.*

This is a very curious little plant, in habit a good deal resembling *Dasycladus clavæformis*, but of a totally different structure, if that plant be, (as Agardh assures us it is,) nearly allied to the *Characeæ* (especially to *Nitella*),—a tribe to which our parasite is not in the least related. *Myriotrichia* will stand next to *Ectocarpus*, from which it differs far more in habit than in structure. The long *hyaline fibres* which I have admitted into the generic character appear to be in every respect similar to those found in *Trichocladia*, *Chordaria* and many other Algæ of totally different families. These *fibres*, however, do not occur in any other genus of *Ectocarpeæ.*

Tab. CXXXVIII. Fig. 1, Plants: *nat. size*, parasitical

CXXXVIII.



W.H.Harvey Esq.r Del.t *Myriotrichia claviformis.* [illegible]

on *Chorda lomentaria*. *f.* 2, tuft of Plants. *f.* 3, a single frond. *f.* 4, a ramulus. *f.* 5, Section of a frond. *f.* 6, Capsules: more or less magnified.

CERAMIEÆ.

7. Polysiphonia *subulifera*: filis flexuosis flaccidis vagè ramosis, ramulis sparsis subulatis simplicibus patentibus, articulis diametro æqualibus, multistriatis.—*Hutchinsia subulifera, Ag. Sp. Alg. v.* ii. *p.* 97.

Ad "Torquay"—*Dna. Griffiths et D. Borrer.* Aug. 1833.

Fila 4—5 uncias longa, crassiuscula, sensim attenuata, apicibus acutis, subdichotoma vel vagè ramosa; *rami* divaricati flexuosi elongati subdivisi, obsessi *ramulis* sparsis (intervallo 1—2 linearum) brevissimis spinæformibus, patentibus acutis simplicibus, rarò subpinnulatis, pinnulis perbrevibus. *Articuli; ramorum* diametro æquales 4—6 venosi, venis rectis tenuibus, geniculis opacis; *ramulorum* diametro brevioribus. *Substantia* tenera flaccida. *Color* purpurascens.

In habit this species strongly resembles a young specimen of *P. fruticulosa*, but it is nevertheless perfectly distinct. The substance is tender and flaccid, the ramuli are never nearly so much divided, and above all the filaments are distinctly articulated to the very base, the veins being straight and parallel—not reticulated and anastomosing as in *P. fruticulosa*. Agardh's description of *Hutchinsia fruticulosa* agrees admirably with the Devonshire specimens, and leaves no room to doubt the correctness of my reference. His specimens were gathered at Venice.

8. Griffithsia *simplicifila;* ramulis verticillatis imbricatis furcatis rectis filum primarium totum tegentibus.—(TAB. CXXXIX.) *Ag. Spec. Alg. v.* ii. *p.* 134.

Ad promontorium "Ardinary Point," dictum, et ad "Black-Castle," in Comitatu "Wicklow."

Frons 2—8 uncias longa, crassa, irregulariter ramosa; *ramis* subalternis elongatis simplicibus vel subdivisis. *Filum primarium* articulatum, articulis diametro sub-duplo longioribus,

ad genicula emittens ramellos strictos erectos tenues breves, semel furcatos obtusos, articulatos, articulis diametro quadruplo longioribus, cylindricis. In exemplis nonnullis rami majores *ramis-secundariis* brevioribus papillosis; aliis ramulis elongatis tenuibus inferne nudis, superne ramelliferis obsessi; aliisque rami minores sæpè interruptè verticillati (vel nunc nudi, nunc ramellis vestiti) sunt. *Color* purpureo-roseus. *Substantia* ramorum cartilaginea, ramulorum tenera. *Fructus* mihi ignotus.

The slender branches, bright colour and straight once forked ramuli distinguish this species from *G. equisetifolia*, which it resembles in general habit and with which it has frequently been confounded by authors. I was so fortunate as to add it to the British Flora last autumn during a short excursion to the coast of the County of Wicklow. My first specimens were gathered on rocks below "Black Castle" near the town of Wicklow, where it grows very sparingly indeed; and I afterwards procured a tolerable supply among rejectamenta at Ardinary Point about seven miles to the southward. On the continent it is a native of the coasts of France where it does not appear to be uncommon.

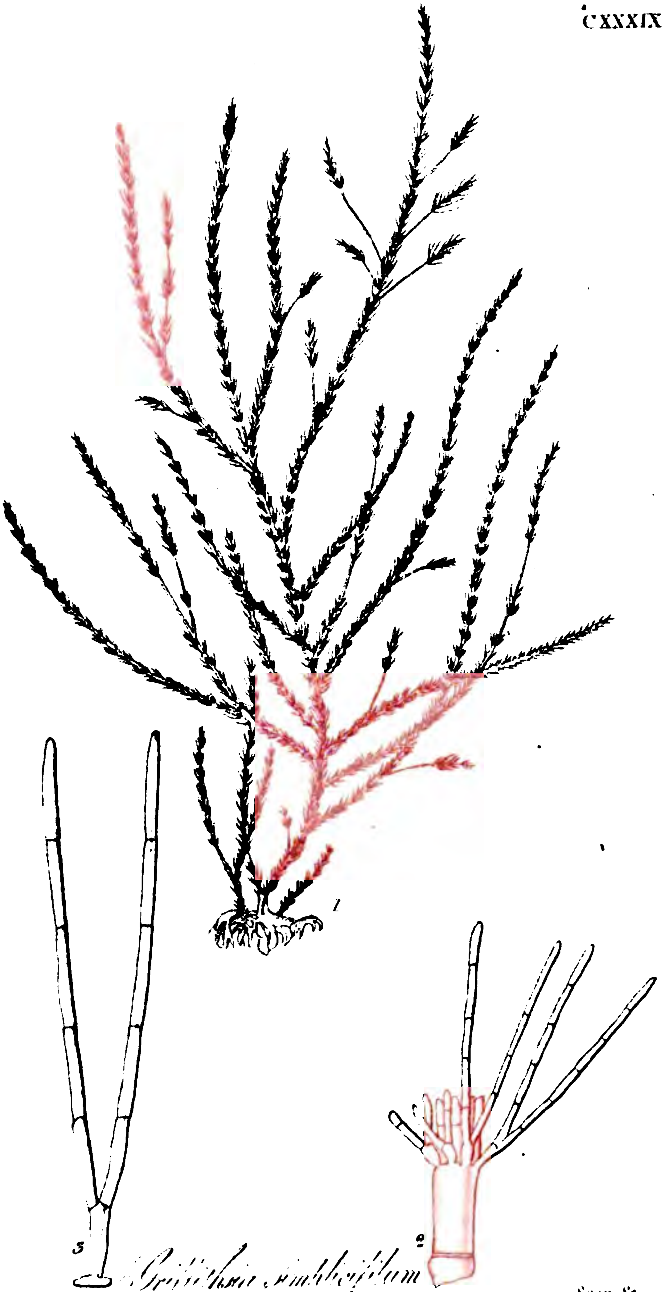
Tab. CXXXIX. Fig. 1, Plant, *nat. size. f.* 2, portion of do. *f.* 3, ramuli:—*magnified.*

9. Calithamnion *byssoides. Arn. in Hook. Br. Fl. v.* ii. *p.* 342. This proves to be a variety or the young state of *C. corymbosum.*

10. Calithamnion *versicolor.—β. seirospermum;* ramellis ultimis fasciculatis moniliformibus articulis demum in pseudocapsulos mutatis. *Harv. in Wyatt, Alg. Danm. N.* 91.

This remarkable variety was discovered by Mrs. Griffiths last autumn on the Coast of Devonshire, and beautiful specimens are published in the 2d vol. of the "Algæ Danmonienses." In ramification and general appearance it perfectly agrees with the true *C. versicolor*, but in the fructification there is a striking difference. The capsules, instead of being, as in the typical form, borne solitary in the axilla, are ranged consecutively in a moniliform manner and a number of these

CXXXIX



Griffithsia simplicifilum

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strings of capsules, collected at the apices of the branches into little fascicles. In young specimens the change of an articulation from its usual form and structure into a perfect capsule may be most distinctly seen, examples occurring in every state of transition from the slightly swollen pale-coloured joint to the ripe tri-sporous capsule. Here then we have a beautiful illustration of the origin of the capsule in this genus, for real capsules are formed in precisely the same manner, though from different parts of the frond.

11. Ceramium *fastigiatum* (*Harv. MS.*); filis capillaribus tenuissimis æqualibus dichotomis fastigiatis, geniculis opacis, articulis inferioribus hyalinis longis, ultimis roseis brevissimis. —*Conf. fastigiata. Roth*, *Cat.* ii. *p.* 224. ?—*Cer. diaphanum.* β. *arachnoides.* *Ag. Sp. Alg. v.* ii. *p.* 152.—*Cer. diaphanum. Wyatt*, *Alg. Danm. N.* 86.

In mari Brittanico, ad algas et corallinas, haud rarò.—*Fila* digitalia et ultra, æqualia vel parum attenuata, e basi regulariter dichotoma, axillis inferioribus distantibus, superioribus creberrimis, pluries furcata, fasciculata, apicibus fastigiatis, forcipatisque. *Articuli* inferiores plerumque diametro 3—4-plo longioribus hyalinis, superioribus brevissimis roseis; *genicula* opaca elevata purpurea. *Substantia* tenera flaccida. Cæspitis *color* atro-purpureus.

This species, which, I confess, I offer with some hesitation, has usually been considered a variety of *C. diaphanum*, from which, at the request of Mrs. Griffiths, I now separate it. That lady has long watched both species in their natural localities, and is convinced that they are perfectly distinct. If for the present, I do not express myself so strongly, I may at least say that the characters which distinguish our *C. fastigiatum* appear to me quite as important as those which separate some other species of this genus. The filaments are not more than half the diameter of those of *C. diaphanum*, and are, moreover, regularly dichotomous from the base to the apex, and always level-topped; whilst in that species the filaments divide very irregularly, the main branches are of various lengths, not dichotomous but pinnated with slender dichotomous branches in a distichous manner.

CONFERVEÆ.

12. Conferva *gracilis;* filis tenuibus flexuosis sericeis ramosissimis flavo-viridibus, ramis angulato-flexuosis parcè divisis, ramulis ultimis pectinato-secundis attenuatis longissimis, articulis diametro 3—5-plo longioribus. *Griff. in Wyatt, Alg. Danm. N.* 97.

Ad algas majores et Zosteram.—"Torbay." *Dna. Griffiths* & *Dna. Wyatt.*—"Youghal," *Dna. Ball.*—"Wicklow," ubi ipse legi.—*Fila* 6—12 uncias longa, pulchrè cæspitosa, flavo-viridia siccitate nitentia; rami primarii maxime angulosi vel geniculato-flexuosi.

A very beautiful species. It is nearly allied to *C. flexuosa* of *Dillwyn*, a native of salt marshes, and by *Agardh* made a variety of *C. fracta.* The appearance of *C. gracilis*, however, is very different, and it always grows in the open sea. Whether or not our plant differs from the *C. sericea* of continental authors I cannot determine; I have seen no authentic specimens, and in such a genus as this I prefer giving a new name to the British species, to deciding on uncertain grounds. The whole Genus wants revision; but, perhaps, no part of it more than the section to which *C. gracilis* belongs.

13. Conferva *uncialis;* cæspite brevissimo spongioso basi simpliciusculo apice in ramos lanosos fastigiatos diviso, filis tenuissimis flexuosis parcè ramosis maximè intricatis, ramulis distantibus secundis subpectinatis longis patentibus incurvatisve articulis diametro 2—4-plo longioribus. *Ag. Syst. Alg. p.* 111. *Fl. Dan. t.* 771. *f.* 1.

Ad rupes. "Torquay." *Dna. Griffiths.*

Cæspes uncialis intense viridis spongiosus, habitu ferè *Ectocarpi tomentosi*, ex filis tenuissimis maxime intricatis flexuosis constans.

This pretty little species is well distinguished by its peculiarly matted, almost spongy habit, and slender flexuose slightly branched filaments, which it is no easy task to separate on the table of the microscope. I have seen no continental specimens, therefore the correctness of my reference may be doubted, but so far as descriptions may determine the question, Agardh's and our British Plant well agree.

C. uncialis is nearly allied to *C. centralis*, in company with which it is in England found growing: there are however, abundant characters to distinguish them, even to the naked eye.

SIPHONEÆ.

14. Codium *adhærens;* "fronde sessili crustacea irregulari." *Ag. Syst. p.* 178.

Ad rupes.—"Torquay." *Dna. Griffiths*, 1833.

This species requires more examination. It is almost impossible to judge accurately by dried specimens in this genus, I may say in this family, and I have not yet had an opportunity of watching it on its native rocks. Mrs. Griffiths who kindly sent me specimens last autumn, gathered it some months afterwards in the locality from which her first specimens were taken, when the plant had extended itself considerably without any disposition to throw up a frond like *C. tomentosum.* She is therefore of opinion that this is a true species and perfectly developed. However, when it is well known that *C. tomentosum* in its early stages is flat and expanded, it perhaps requires a longer trial, before we can fully determine the matter. Agardh's specimens came from Cadiz, and I have received similar ones from the Mauritius.

OBSERVATIONS ON SOME BRITISH PLANTS, PARTICULARLY WITH REFERENCE TO THE ENGLISH FLORA OF SIR JAMES E. SMITH. BY W. WILSON, ESQ.

[Continued from page 271.]

NOTES *to the* FOURTH VOLUME *of the* ENGLISH FLORA.

1. Orchis *pyramidalis.* Gloddaeth, June 11, 1828. I do not find the protuberances upon the lip to be hollow:—they are laterally compressed and without any depression on the lower side of the lip. Masses of pollen greenish-gray, consisting of angular, compressed, loose grains, connected by filaments from one of the angles—middle lobe of the nectary the smallest.

2. Orchis *conopsea.* Anglesea, July 7, 1828. Masses of pollen two-lobed, yellowish, not crimson, of large loose grains, the glutinous base of the masses long and narrow.

3. Epipactis *ensifolia.* Llanberis, May 18, 1828. Petals shorter than the calyx, in this species. Masses of pollen white, divided from top to bottom, linear and curved. Style slightly incurved, flat in front. Lip of the nectary indistinctly 3-lobed. The "yellow protuberance" consists of oblong papillæ; the "elevated lines" are continued to the bottom of the spur, and the intermediate furrows transversely corrugated. Anther granulated externally. The column has a projection on each side between the anther and stigma.

4. Malaxis *paludosa.* Sink Moss, Cheshire, August, 1826. When I communicated to Sir J. E. Smith my remarks on this Orchis, I learned that what seemed peculiar in the mode of propagation, was also found in *M. Loeselii;* but on reading the description in *Engl. Fl.* I do not find that any notice is taken of it in either case. In No. 5 of the *Mag. of Nat. Hist.* I observe that Professor Henslow has

given an account of the gemmæ at the tips of the lower leaves, with a drawing of some which had begun to vegetate, which confirms, while it extends, my own observations on the same subject; but he does not notice the swelling of the base of the stem, and the gradual formation of the hybernaculum, from which I conclude that *Malaxis Loeselii* resembles it in this respect, though no intimation of the fact appears in the *Engl. Fl.* I cannot agree with Professor Henslow in thinking *M. paludosa* a parasitical plant, whatever may be the case with respect to *M. Loeselii.* I have seen *paludosa* growing in places where peat had been dug but a few months before, and consequently almost bare; and in that situation its parasitical habit, if it existed, would have been very obvious.

I cultivated this plant for two years, but it afterwards disappeared. A cluster of fourteen plants in flower was removed into a garden pot and well supplied with water. The bases of the stems surrounded by the leaves, in a decayed state, were all that remained in the spring following. The *hybernacula* were then lying loosely on the surface. After immersing them in the soil, they began to vegetate, but only two or three arrived at maturity. These, in the autumn following, formed the hybernaculum nearly an inch above the base of the stem, and after the leaves and the upper parts had decayed they remained supported by the stalk below, for some time longer. Absence from home prevented further observation.

5. Carex *capillaris.* Scotland, July 23, 1827. Moist declivities on the mountains. Root cæspitose. Stem nearly or quite round, smooth. Leaves with *concave* sides, recurved, smooth, ribbed, shorter than the stem. Bracteas with rather long sheaths, the lowest sheath often enclosing the rest, appearing then, as a common sheath for 3 or 4 catkins, which are placed on long pendulous, roughish, capillary stalks. Barren catkin on a shorter stalk than the rest. Scales of the fertile catkin lax, ovate-lanceolate, membranous and white

at the edges, light yellowish brown, with a green midrib. Fruit longer than the scales, ovate-lanceolate, tapering, smooth, erect or slightly recurved.

6. Carex *limosa.* Anglesea, July 19, 1828. Root only moderately creeping, and that not horizontally. Stem often divided below the ground, fertile one acutely triangular with a prominent rib in each of the sides, roughish near the top, otherwise smooth, longer than the leaves, though the leaves of the barren shoots are taller than the fertile stem. The leaves are not flat but compresso-carinate, narrow, rough-edged above. Bracteas like the leaves, with a purplish short sheath. Scales of the fertile catkin roundish-ovate, pointed with a 3-ribbed keel—those of the barren ones ovate-lanceolate. Seed pointed with the lower part of the style, which often projects beyond the hardened corolla. Barren stems with several joints, at each of which is found a bud on the removal of the leaves, the intermediate spaces between the joints yellow and shining.

7. Carex *pulla.* Mael Greadha, &c., July 23,1827. Root creeping. Stem with convex sides and sharpish angles, rough-edged above, though sometimes rounded and smooth. Leaves slightly keeled or compresso-carinate, dark green, as long as the rigid stem. Bracteas auricled. Lower catkin always stalked, the stalk sometimes very long, and sometimes the lower bractea has a very short sheath. Fertile catkins ovate, obtuse, often solitary. Scales crowded, ovate, rather blunt, shorter than the fruit, deep shining purple, with a rib of the same colour, not very prominent. Scales of the barren catkin oblong and more obtuse. Stigmas two. Fruit elliptical, inflated, dark purple, with a very short notched beak, spreading.

Grows in swamps about springs in the higher regions of the Scottish mountains.

8. Carex *rigida.* Snowdon, June 27, 1828. Bracteas often erect, not more frequently recurved. Stigmas nearly or quite sessile, erect, not spreading, minutely papillose. Beak

of the fruit exactly described in *Engl. Fl.*, and the fruit has sometimes recurved points, almost as in *C. stricta.* Germen, or corolla, rather *on a short stalk.*

Nearly allied to *C. cæspitosa*, nor is it distinguishable by any other marks than the broad leaves, stalked corolla and neatly formed, erect stigmas, which, if constant, may perhaps serve to keep it in the rank of a species.

9. Carex *cæspitosa.* Anglesea, May 5, 1828. Root creeping, but not tufted. I suspect it has been, in this respect, confounded with *C. stricta.* Stem with blunter angles than *rigida* or *stricta.* Stigmas nearly sessile in the corolla, spreading and flexuose, with coarse pubescence, similar to the last, but larger and more loose. Corolla sessile. Fruit without ribs, (in a young state, at least) also sessile. Beak like that of *rigida*, except that it is not cloven or notched. The sessile fruit and entire short cylindrical beak, will distinguish it, perhaps, from *stricta.*

10. Carex *stricta.* May 29, 1828. (Wales.) Root tufted. Bracteas auricled as in *C. cæspitosa.* Scales of the fertile catkin sometimes 2-ribbed. I have not examined the stigmas. Fruit *tapering into the beak*, which *has a spinulose orifice*, the spinulæ spreading. Point of the fruit recurved, notched externally. Corolla on a short stalk. The spinulose mouth of the notched beak, tapering summit of the fruit and stalked fruit, distinguish it from *cæspitosa*, but whether permanently or not, I am as yet uncertain.

11. Littorella *lacustris.* Anglesea, September 15, 1828. Flowers, in clusters, in the axillæ of the outer leaves. Four sessile fertile flowers with a central stalked barren one. Fertile flowers *with a calyx* of two, three, or sometimes four, linear acute leaves, as long as the corolla, somewhat channelled on the inner side. There is also a membranous lanceolate bractea at the outside of each fertile flower. Seed hard (not a proper nut, as I think.) Embryo direct, with two cotyledons; surrounded by albumen. Leaves with three bundles of spiral vessels, otherwise of cellular structure. I have not since met with the variety mentioned

in *Engl. Fl. vol.* iv. having two barren flowers on the same stalk.

12. Salix *reticulata.* Craig Calleach, July 4, 1827. Filaments hairy. Nectary in about 8 deep lobes surrounding the germen or anthers.

13. Viscum *album.* Berries examined December 31, 1828. The seed has most commonly two embryos, in some cases three, and occasionally one only. I consider *two* the most usual number; for as the plant is diœcious, and its propagation by seed rather precarious, I think it probable that the two embryos may produce the barren and fertile plants, designed to grow together. Embryo with two cotyledons, the end of the radicle thickened and abrupt, just protruding from the albumen. The skin of the seed is thin. Berry forming two concentric layers of viscous matter, the inner one closely adhering to the seed after forcibly bursting the berry.

14. Rhodiola *rosea.* Wales, June 27, 1828. Calyx of the barren flower with 4 linear segments. Petals four, linear, larger than the calyx segments. Four of the filaments attached to the bases of the petals, between which and the abortive germens are 4 oblong, notched, flattened, yellow nectaries. Anthers at first reddish, afterwards blackish-green, two-celled, erect, ovate, with 4 furrows, the valves separating at two opposite furrows.

15. Juniperus *communis.* Gloddaeth, May and June, 1828. Calyx of the fertile flower imbricated. Corolla, of one petal, campanulate, in three deep roundish-ovate, concave segments, permanent, at length united into a fleshy covering to the seeds. Pistils three, superior. Germen ovate, gibbous at the back. Style short. Stigma two-lipped—the germen has a single rudiment at its base. Seeds oblong, angular, bony, crowned with the short permanent style.

16. Juniperus *nana.* Glyder Fawr, June 24, 1818. The calyx-scales more lax than in the last. Barren fl: Calyx apparently formed of two rows of scales, 3 in each row. Anthers 3, 4, or 5 together, fixed to the back of each inner

scale of the catkin, which may, perhaps, more properly be termed filaments than scales. Anthers of one cell with an external fissure.—Pollen globular. This is only a variety of the preceding.

17. Aspidium *aculeatum*. Cultivated October, 1828. Seeds much smaller than in *lobatum*, of an angular shape, with a few transparent prominences—those of *lobatum* more regularly formed, almost round and covered with numerous narrow projecting points.

18. Asplenium. GEN. CHAR. In some cases I find the cover to separate at the outer edge, but such instances are not frequent.

19. Lycopodium *selaginoides*. Aber, July 11, 1828. Seeds 4 together, in aggregate masses, muricate, larger than in *Selago*.—They resist water and float on the surface. Capsule like that of *Selago*, but less compressed. The "lower capsules containing 4 white globular bodies" are not "placed one upon the other three," but two upon two. Each consists of two valves of a triangular shape, or 3-lobed. The "globular bodies" are filled with an oily or mucilaginous matter. These capsules ripen later than those containing the seeds.—Leaves imperfectly 5-rowed, the rows oblique or spiral.

20. Lycopodium *Selago*. Aber, July 11, 1828. Leaves in 12 rows; but I suspect this to be variable. Seeds in aggregate masses of 4 each. The upper whorl usually consists (instead of capsules) of short branches or "stalked anthers," surrounded by broader leaves than the rest; their nature I cannot properly understand.—The leaves are keeled at the back, in alternate whorls of 6 each.

21. Lycopodium *alpinum*. Cwm Idwel, August 7, 1828. The barren branches usually spreading and fascicled, in a fan-shaped manner. The leaves not uniform, those at the sides of the branch are largest and of rather different shape from the rest; those on the upper and lower side are scarcely keeled. Scales of the spikes in 6 rows. Capsule kidney-shaped, obscurely 3 or 5-lobed, or irregularly pitted in various parts, the edge blunt and the sides flattened. Seeds

nearly round, dotted or roughish. I can perceive no bitter taste in the plant.

22. Equisetum *variegatum*. Cultivated. Stem with 6 or 8 furrows, the ridges or angles also furrowed. In each of the principal furrows are two rows of prominent dots.

23. Isoetes *lacustris*. Ftynnon frech, Snowden, June, 1828. In the anther the oval grains were some of them opaque, some pellucid, the latter probably abortive. I counted ten columnar receptacles in one cell extending from back to front. In the capsule I could not find that the seeds were combined, nor had they any trace of a stalk, they split into 4 portions, and are winged at the sutures. Each capsule contains from 20 to 40 rough seeds. Immediately above the anther and capsule, on the inner side of the fronds is found a rounded membranous scale with a depression at its base, and there is a communication between this part and the back of the capsule or anther. In one instance the scale was double. The male and female fronds are placed without any order, the former are as often found outside as in the centre of the bunch of fronds. Fronds, in this situation, erect, with 4 longitudinal cavities. Root of many simple or forked simply tubular fibres.

Specimens growing in Llyn y Cwn had the fronds spreading, flattened and dilated below, and much shorter, (2 inches long,) the plants appeared to be diœcious.

SUPPLEMENT TO THE REMARKS ON THE ENGLISH FLORA.

By W. Wilson, Esq.

15th May, 1830.

Vol. I. of Engl. Fl.

1. Pinguicula *Lusitanica*. Near Killarney, &c., August, 1829. Root fibrous. Leaves notched at the extremity. Cor-

olla with a white hollow protuberance in the throat below, covered with glandular pubescence, and the limb sparingly beset with glandular-tipped hairs. Filaments bent as in *Utricularia*, bristly at the base, granulated above. Anthers 1-celled. Stigma without any distinct upper lip, lower lip revolute and transversely corrugated. Throat of the corolla internally yellow, streaked with red; spur reddish.

2.* Pinguicula *grandiflora*. Near Kenmare, August 7, 1829. Nectary cylindrical, NOTCHED (second inflorescence) at the extremity and sometimes strongly 2-lobed, the lobes widely spreading. Corolla marked on the palate with five *prominent* dark lines with intermediate furrows covered with jointed bristles, most copiously so near the nectary where they are pointed inwards. Anthers 1-celled; pollen globular, discharging in water the granular contents at a small orifice much like the anthers of mosses. Upper lip of the stigma narrow, tapering, and acute, the lower revolute, rounded, finely crenate with a fringed margin, bent towards the germen so as to conceal *and partly surround* the anthers. Seeds with reticulated skins, receptacle of the seeds globular pedicellated. The corolla is sometimes 4-cleft.

N.B. Smith in the *Sp. Char.* makes "petal" synonymous with "corolla."

3. Utricularia *minor*. Dromuchty Lake, near Kenmare, August 7, 1829. Lower leaf of the calyx slightly notched. Bracteas cordate. Palate of the corolla *not flat*, though less

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* May 18, 1830. I have now several plants of *Pinguicula grandiflora*, in full flower; as well as a brood of young ones, from the axillary buds so plentifully formed in the Autumn. The nectary is deeply notched, or rather with two lobes, widely spreading. In the evening, and before rain, the flower-stalk becomes very much curved just below the flower, elevating the nectary from a nearly vertical direction to a *horizontal* one, and depressing the limb of the corolla so that rain cannot enter. I have observed this to happen in the same flower for three successive days.

W. W.

prominent than in *U. vulgaris.* Lower lip curled in the margin; no streaks visible on the corolla. The bladders on the leaves have valves as in *U. vulgaris*, with a crest formed of two branched filaments.

4. Rhynchospora *alba.* Near Killarney, August 4, 1829. Leaves channelled and keeled with incurved edges. Bristles at the base of the germen from 8 to 11, rough with deflexed spinulæ; three or four of the bristles inserted lower than the rest, and dilated and fringed at the base.

5. Rhynchospora *fusca.* Near Killarney, Upper Lake, July 30, 1829. Leaves channelled, smooth. Culm hollow. Root moderately creeping. Bristles certainly five, sometimes six, at the base of the germen, longer than the seed, rough with *erect* spinulæ. Stigmas two. Beak of the seed flat with rough edges. Seed compressed, or two-edged.

Grows in more swampy situations than *R. alba.*

6. Galium *pusillum?* Mucruss, near Killarney, September 12, 1829. Stems with columnar angles, smooth, except below the whorls. Leaves, on the branches usually possessing in the margin a complete row of deflexed prickles. Segments of the corolla 3-ribbed. Fruit roughish; certainly not quite smooth. It may be but an erect var. of *G. saxatile.*

7. Exacum *filiforme.* Glengariff, August 22, 1829. Stem imperfectly four-sided. Flower-stalks square. Anthers cordate, compressed. Filaments suddenly inflexed above. Seeds attached to receptacles placed along each edge of the two valves which are *not* inflexed. Herb not perceptibly bitter. The flowers do not open in cloudy weather, and probably in the morning only of sunny days.

8. Sium *verticillatum.* Near Kenmare, August 7, 1829. Segments of the lower leaves often forked. General bracteas about 7, lanceolate, resembling the partial ones.

9. Pimpinella *magna.* Mucruss, September 10, 1829.

Stem furrowed, hollow, slightly pubescent. Root spindle-shaped: grows three feet high.

10. Arbutus *Unedo*. Near Killarney, Oct.—Dec. 1829. Inside of the corolla hairy; also the filaments which are subulate. Pollen globular, apparently consisting of 3 or 4 parts joined together. Seeds ranged in two rows along the inner angle of each cell.

OBS. Sir J. E. Smith describes the fruit as uneatable in Ireland; but he must have tasted only unripe berries, because I can testify, from repeated experience, that the *ripe* fruit is really very palatable; the eating of one giving a zest for more. His must be indeed a fastidious taste, who would reject them, especially at such a season; although its claims to notice are sufficient to rank it high even with summer fruits. It is eagerly devoured by children when they can get at it, and is generally esteemed by persons of a more cultivated taste residing near the spot.

11. Geum *rivale*. Near Warrington, May 22, 1829. Receptacle of the pistils elevated on a hairy stalk. The lower portion of the style is quite smooth, hairy from the hooked part upwards. The language of the description in *Eng. Fl.* seems inaccurate.

VOL. III.

12. Sibthorpia *Europæa*. Near Brandon Mountain, Oct. 9, 1829. *There is a trifid nectary* with awl-shaped segments at the base of the bristly germen, opposite to the two smaller segments of the corolla. In each cell of the capsule are four *tunicated seeds*. Bristles of the leaves, stem, &c., *not* jointed. This plant is frequent by road sides between Castle Gregory and Connor Hill and in other places adjacent.

13. Orobanche *minor*. Mucruss, Oct. 26, 1829.—Generic Character: A nectary at the base of each filament; none below the germen; but the filaments are inserted on the lower side of the corolla's tube considerably higher up

than the bottom. Stigma with a deep central depression. Embryo at one end of the seed, enclosed within a large proportion of albumen.

14. Cheiranthus *fruticulosus*. Conway and Rhuddlan Castles, N. Wales, March 29, 30, 1830. The pubescence, in every part, even that of the germen, consists of spindle-shaped or acicular bristles appressed to the surface of the plant and *attached by the middle only, moving easily on a centre* like the magnetic needle; the bristles are placed longitudinally. No instance of stellate or simple pubescence observed.

15. Carex *cæspitosa* and *stricta*. Woolston, near Warrington, May 14, 1829. So far as the distinctions between these Carices depend on the shape of the mouth of the corolla, I am now inclined to think them fallacious. What I take to be *C. stricta* has the mouth of the corolla destitute of spinulæ, whereas in *C. cæspitosa* it is fringed almost like the Welsh specimens of *C. stricta*.

16. *Eriocaulon septangulare*. Dromuchty Lake, near Kenmare, August 7, 1829. Root rather *progressive* than creeping, resembling in this property *Subularia aquatica*. The corolla in both kinds of flower consists of *two* petals, or segments—the two other floral coverings I judge to be a two-leaved calyx, and there is also an outer scale or bractea larger than the rest of the coverings. In the fertile flower the petals seem to be free, of oblong form, bearing, like those of the male flower, a roundish gland near the apex. Germen on a short stalk. Stigmas two. Stamens four, abortive in the fertile flower, and in the male flower always attended by an abortive pistil; both are arranged *indiscriminately* on the common receptacle.

When the bottom of the lake consists of peat, as in Dromuchty Lake, the buoyancy of the herbage frequently causes a separation of a large tuft from the adjacent soil and it then forms a submersed and almost floating island; but when the bottom is gravelly as in *Clunie Lake*, 3 or 4 miles to the westward, no such effects occur.

17. Trichomanes *brevisetum*. Turk waterfall, July 31,

1829. This is well described. The receptacle does certainly when the fructification is much advanced project, often above four times the length of the cover, and often bearing capsules throughout its whole length; and this extension of the receptacle is gradual. The young fructification appears in November and December, at which time the receptacle is included within the involucre.

18. Hymenophyllum *Tunbridgense.* Near Killarney, August 1, 1829. Covers, as described, sharply toothed, compressed, valves dilated upwards. Seeds aggregate, in fours, the stalk of the fructification winged. Pinnæ rhomboidal, truly pinnatifid, with 8 or 10 segments, very much toothed at the apex and their nerve discontinued. Frond complanate, of a glassy appearance.

The texture is more delicate, and the reticulation smaller considerably than in the next species, and it is not, like it, liable to curl up in drying. It grows to a larger size, and is often very broad, approaching to a lanceolate figure, and with a stalk of considerable length. I have specimens six inches in length.

19. Hymenophyllum *Wilsoni.* Near Killarney, August, 1829. Frond oblong, with a very short stalk compared with the other species. Pinnæ not properly pinnatifid but wedge-shaped, abrupt, widest at the top with four or five erect or ascending, simple or forked segments, (seldom any more) obliquely disposed in reference to the rachis, the segments are less toothed at the apex than elsewhere and their nerve is not discontinued. Cover entire, the valves very prominent at the back, ovate. It is supported on a stalk bent upwards and not very evidently winged. Seeds disposed, as in the other species, four together, surrounded by a pellucid covering.

The reticulation of the frond is much coarser in this species, it curls very much in drying.

20. Equisetum *variegatum*, var. Mucruss, near Killarney, December 9, 1829. In a wet ditch. Stem mostly simple, two feet high or more, with ten principal furrows and ten

intermediate smaller ones. Sheaths as in the Southport specimens, but generally without the long tapering point to the segments. The sheath really extends much below the black or discoloured part.

Addendum.

Salicornia. Mr. Borrer long since observed *S. fruticosa*, and *herbacea* to be diandrous. See Dillw. & Turn. Bot. Guide, p. 597.

The following Plants are marked as examined and compared with *Eng. Fl.* and the descriptions found unexceptionable and exact;

Scirpus rufus
Eleocharis acicularis
Aira cristata
Sherardia arvensis
Galium boreale
Campanula hederacea
Gentiana nivalis
Torilis nodosa
Sium inundatum
Vaccinium Myrtillus
Erica cinerea
Pyrola media
Saxifraga stellaris
Sedum villosum
Cerastium aquaticum
Pyrus Aucuparia

Thalictrum flavum
Ranunculus auricomus
Thymus Calamintha
——— Acinos
Scrophularia vernalis
Teesdalia nudicaulis
Lavatera arborea
Hypericum hirsutum
Hieracium umbellatum
Hypochæris maculata
Cichorium Intybus
Carduus Marianus
Eupatorium cannabinum
Artemisia Absinthium
——— vulgaris

OBSERVATIONS ON THE DIFFERENT VARIETIES OF ZIZYPHUS JUJUBA, *Lam.* CULTIVATED IN THE MAURITIUS; BY L. BOUTON, VICE-SECRETARY OF THE NAT. HIST. SOC. OF THAT ISLAND, AND CORRESPONDENT OF THE ROYAL MUSEUM OF NAT. HIST. OF PARIS.

(*Read at the meeting of the Natural History Society of Mauritius, and communicated by M. Bouton, with the drawings from the pencil of Professor Bojer, for this Journal.*)

I HAVE undertaken to write the Natural History of the Fruit Trees which are cultivated in the Island of Mauritius, as well as of those, few however in number, which are found indigenous in our forests, and from the culture of which, some advantage may be expected. My intention is to glance at them under their agricultural and œconomical characters, and to notice particularly those which I think would deserve to be more generally diffused. The result of my researches shall be laid before the Society at its several meetings. I am aware of the difficulties that lie in the way of such an undertaking; remotely situated as I am, far from large libraries, extensive collections, or learned bodies, and consequently destitute of objects for comparison, how can I hope to avoid falling into repetitions, or what is worse, giving credit to errors, long since rectified in Europe? On the other hand, though beset with many obstacles, I enjoy many advantages for the accomplishment of this design. The plants that I shall describe are growing before my eyes, and with the exception of the few fruit-bearing vegetables that have been brought from Europe, all those introduced from Bengal, China, Madagascar and the other intra-tropical regions, grow here as vigorously as in their native soil. Of these I mean to give a successive enumeration; and, happy in the belief that their history will present some remarkable facts that deserve attention, I propose now to speak to the Society of a species of the Genus *Zizyphus*, which is abundant in the mountains, and which presents a certain number of varieties, some of which though probably hitherto unnoticed, might constitute new species, if submitted to a close examination. I shall content myself, however, with describing them without taking on myself to give them a new appellation.

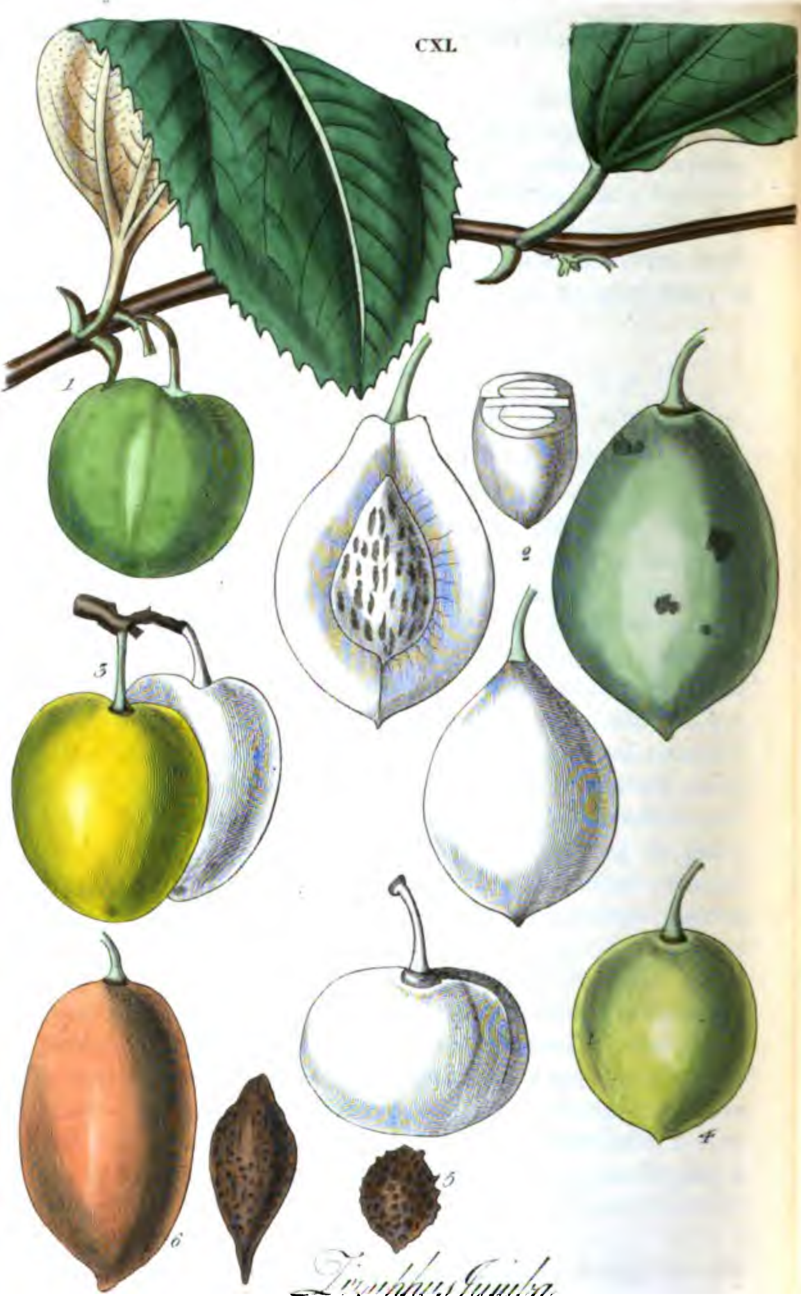
ZIZYPHUS. *Lam. Ill. t.* 185. *DC. Prodr.* ii. *p.* 19.
NAT. ORD. RHAMNEÆ, *R. Br. DC. l. c.*

Z. *Jujuba*, Lam. Dict. iii. p. 318. DC. Prodr. ii. p. 21. (TAB. CXL.)—Rhamnus Jujuba, *Linn. Sp.*—Malus Indica, *Rumph.* ii. *t.* 36.—Perim Toddal. *Rheed. Mal. v.* vi. 41.

The shrub which bears the fruit, known in the Island of Mauritius by the name of "*Masson*," rises to a height of about 25 or 30 feet. The *Bark* is greyish, thick, and cracks in age, leaving deep crevices on the *Trunk*. *Branches* spreading, drooping, and the young branchlets, as well as the underside of the foliage, covered with a cottony, whitish, but sometimes rust-coloured down. *Leaves* nearly oval, rounded in some varieties, elongated in others, finely toothed along their edges, blunt, of a glossy green above, and marked with three longitudinal main nerves. Spines growing in pairs, one large, straight and sharp-pointed, the other smaller, stronger and hooked. These two last characters belong equally to several other species of the genus *Zizyphus*. *Flowers* axillary, greenish, arranged in small tufts. *Calyx* 5-toothed; *Petals* 5, unguiculate; *Stamens* with the filaments curved inwards; a fleshy disk that surmounts the ovary is tipped with 2 *Styles*. The *Inflorescence* appears after the rains of January and February, and the fruits ripen in June and July, continuing till the beginning of September; they are fleshy drupes of an ovoid or rounded form, enveloping a bony and wrinkled *Nut* of 2 monospermous cells, one of which is most frequently abortive.

The *Masson* grows readily and seems to delight in the

CXL



Zizyphus Jujuba

Prof. Bojer del.

Swan Sc.

most arid soil, requiring no particular treatment; it is seen abundantly in the southern districts of the island, as the Black River, at the place called Tamarind, at the Pampelmousses, and in the very town and suburbs of St. Louis. The fruits present some differences in the form of the pericarp and kernel, and in the adherence or non-adherence of the sarcocarp to the seed, and I have discriminated six varieties cultivated on my own property of Pampelmousses.

I. *Flesh adhering to the nut.*

Fig. 1. Fruit roundish, rather compressed, with a small cavity at the base, it turns to a yellow colour when ripening, and is sometimes spotted with purple. Flavour acid: the pulp becomes farinaceous and sweetish when it has attained the utmost degree of maturity. This variety, one of the commonest, is probably the type of the species, and the plant which Rumphius has figured and described in the Herbarium Amboynense under the name of Malus Indica. (*Herb. Amb. v.* ii. *t.* 36.)

Fig. 2. Fruit oblong, terminated by a small point, and assuming a beautiful lemon-yellow when ripe. This variety is larger in all its parts, the fruit frequently attaining the size of a pigeon's egg. The taste is sharp, but agreeable when perfectly mature.

Fig. 3. Fruit much like the preceding variety; but smaller and with scarcely any point. The flavour is highly pleasant, and this variety, which is in all respects to be preferred, deserves general culture and wide diffusion.

Fig. 4. Fruit roundish, terminated by a very small point and remarkable for having a longitudinal furrow, which divides it into two slightly elevated projections; it turns, in ripening, to yellow, marked with small purple spots: the taste is very unpleasant.

Fig. 5. Fruit rounded, umbilicate, often marked by slight ribs, as in the preceding variety. Pulp sweetish and agreeably tasted; kernel very large, and terminated by a small sharp point. Branches spreading widely, and loaded with

closely-placed fruits. This variety is very decided, from the form of the fruit and seed.

II. *Flesh not adhering to the kernel.*

Fig. 6. Fruit elongated, very large and remarkable for the spindle-shaped seed which is terminated by a long projecting point. The taste is not pleasant.

I am inclined to believe that the two plants mentioned in the 2d volume of De Candolle's Prodromus, under the names of *Zizyphus rotundata*, and *Z. Mauritiana*, belong, the former to *Var.* 5, and the latter to *Var.* 6, of *Z. Jujuba.* The name *Mauritiana*, and its habitat, as well as the habitat of *Z. rotundata*, DC. are not correct; because no plant of this genus is indigenous to our island: the two kinds which grow in Mauritius are *Zizyphus Œnoplia*, (Mill. Dict. & DC. Prodr.) recently introduced from Ceylon, and cultivated in the Botanic Garden at Pampelmousses, and *Z. Jujuba*, of which I have just enumerated the principal varieties, and which is found almost all over the Island.

I cannot conclude this article without offering my thanks to my colleague, M. Bojer, for the drawings which he has kindly executed at my request, and which faithfully represent the six varieties of *Zizyphus Jujuba*, which I have had the honour to describe to the Society.

L. BOUTON.

INFORMATION RESPECTING THE UNIO ITINERARIA.[*]

TO THE MEMBERS OF THE TRAVELLING NATURAL HISTORY SOCIETY, AND TO ALL FRIENDS OF THE NATURAL SCIENCES, BOTANY IN PARTICULAR.

(*Collection of Caucasian Plants:—Expedition into Arabia for the purposes of Zoology and Botany.*)

THE Travelling Society has received and distributed, during the past year, the first set of the dried plants which were collected in the environs of Schuscha, in Caucasian Georgia, on the frontiers of Persia, by M. Hohenacher of Wurtemberg. The same Botanist has just transmitted a much larger collection of complete and well-prepared specimens. These are already distributed into a hundred separate sets, furnished with printed labels, and ready to be delivered, so that we are in a situation to satisfy the demands of those friends who may forward to us the value free of expense.

The collections are of two kinds, viz.;

1. For the associates or such other individuals as have already received the first set: 138 species, different from those which have been already delivered, for 15 florins (32 francs, 25 cent.)

2. For those persons who have not received the first set, 175 species, of which a great number form a portion of the first set, the price is fixed at 20 florins (43 francs.) Those subscribers who have already a claim on the Society's funds, may deduct it from the amount of this packet. All the

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[*] From the German Circular of Drs. Hochstetter and Steudel.

friends of Bótany will consider these terms very moderate, when they take into view the distance of the country and the very heavy charges upon freight. The specimens are generally complete and very fresh; the fruits being added to a good number of them.

To give an idea of the rarity of the species which are in the two collections, we here cite the names of some:—

Iris Sibirica, Stev.—*Ægilops squarrosa*, L. (erroneously marked as *Æ. cylindrica*, Host.)—*Triticum orientale*, M.B. —*Minuarta montana*, L.—*Scabiosa micrantha*, Desf.—*Pterocephalus plumosus*, Coult.—*Galium Ruthenicum*, Willd.—*G. tenuissimum*, M.B.—*Lithospermum tenuiflorum*, L.—*Lysimachia dubia*, Ait.—*Phyteuma campanuloides*, M.B.—*Cynanchum acutum*, L.—*Astrantia Caucasica*, M.B.—*Anethum cymbocarpum*, D.C.—*Scandix australis*, L.—*Sium lancifolium*, M.B.—*Ornithogalum chloranthum*, M.B.—*Cucubalus fimbriatus*, M.B.—*Silene saxatilis*, M.B.—*S. spergulæfolia*, M.B.—*Pimpinella aromatica*, M.B.—*Queria Hispanica*, L.—*Allium albidum*, Fisch.—*A. rubellum*, M.B.—*Cerastium frigidum*, M.B.—*Pyrus elæagnifolia*, Pall.—*Capparis herbacea*, Willd.—*Delphinium divaricatum*, &c.

We embrace this opportunity of announcing a new expedition, and request the co-operation of all those who are friendly to natural science. Two naturalists, M. G. Schimper, already known to the members of this Society by his journey to Algiers, and M. Wiest, a doctor of medicine and botanist from Wurtemberg, will start during next month for Egypt, whence they will proceed towards the close of the year to Arabia, to explore principally the shores of the Red Sea and the chain of Mount Sinai. The convent of St. Catherine, where they will receive hospitality, will afford a favourable place for keeping their collections in safety, and thence they can be forwarded to Europe by way of Suez and Alexandria.

The wishes that M. De Candolle had expressed in a letter, directed our views long ago to Arabia, and the particulars which M. Gay of Paris has kindly communicated respecting the little known treasures of the Flora of this country have decided us to put this journey into execution. Some collections of dried plants that had been made by an old gardener of the Viceroy of Egypt in the desert of Sinai during June, 1832, were lately sold at Paris, and though gathered at too advanced a season of the year, they still contained upwards of 230 species of acknowledged novelty. This proves what our travellers may easily accomplish by a residence of six months in such a little known country.

A part only of the expenses of this journey will be defrayed by the members of the Society and purchasers, as large grants have been made to M. Schimper by the government of Baden, and to Dr. Wiest by that of Wurtemberg. Through the special bounty of our king, a sum of 1000 florins has been granted to Dr. Wiest, who is the principal organ of the Society, and who advances an equal sum from his own funds.

Still, these means are not sufficient to accomplish this long journey, and we consequently request the members of the Society and all friends of Natural History who may feel interested in this enterprise, to lend their assistance. We venture to hope that the aid granted by the governments of Baden and Wurtemberg, as well as by the king of the latter country, added to the urgent recommendations which our travellers carry to the Consuls of the different countries through which they are to pass, will excite such confidence as that the number of shares, fixed at 30 florins (64 francs, 50 cent.) will enable them to fulfil in every respect the object of such an important enterprise. Our agreement with the travellers is of such a nature that if the proceeds do not cover the expense, the loss will fall first on themselves, so that the shareholders enjoy all possible safety and can incur no risk.

We also engage that such individuals as had taken shares for the Algerine journey and may likewise come forward with subscriptions in behalf of this new enterprise, shall receive a special reimbursement for the small success with which, on account of peculiar circumstances, this former expedition was attended. They will obtain gratis, a proportional share of the collections which our travellers may make on their road, and especially in Egypt, where they are to pass some months. The extraordinary subsidies, to which we have alluded, and which are advanced to the travellers, enable us to make this arrangement. Of course the subscribers to the new expedition will not suffer by this engagement: the terms of the contract with our travelling naturalists being such as to permit a guarantee that the Arabian plants shall not amount to a higher relative price than those Georgian collections spoken of above.

We request all such as may desire to share in the fruits of this undertaking to remit to us, at the latest before the close of this July, the amount of their subscriptions, of which the minimum is 30 florins. We shall gladly receive larger sums from such as desire more complete collections. The larger are the subscriptions, the more extensive will the expedition be, lasting probably some years, and including Mount Lebanon in Syria, and even Abyssinia. If, contrary to all expectation, the number of shares taken for the Arabian journey be too few, the sums already paid will be returned, and the travellers will visit some suitable country with such resources as they may have; so that the Travelling Society will be free from any engagement with the shareholders.

We would further point out that the object of this journey extends not to dried plants alone, but to seeds and bulbs:—likewise to zoological productions, namely insects, shells and fishes, for which we will receive separate subscriptions. On particular order, we can furnish Molluscæ preserved in spirits of wine, reptiles, birds, skins and skulls of Mammiferæ, &c. Dr. Wiest, taking by preference the botanical department, M. G. Schimper will particularly devote his attention to zoology, giving, however, all such mutual aid as may advance the great ends of the journey. They will likewise observe whatever may regard medicine, geography, ethnography, with a view to publish at some future time the result of their remarks and investigations, so that this expedition will be important in all respects and worthy to be recommended to every friend of Science. We especially bespeak for it the favour of those who are actual members, or who intend to join our Society, for which the main object is botany.

We hope that such persons as may desire to possess Caucasian plants, when sending us the amount of these, will also be willing to join in subscribing to an enterprise which has so just a claim on their confidence and encouragement.

PROFESSOR HOCHSTETTER, DR. STEUDEL.

ESSLINGEN IN BAVARIA, *April* 5, 1834.

EXCURSIONS IN THE NEIGHBOURHOOD OF QUITO, AND TOWARDS THE SUMMIT OF CHIMBORAZO, IN 1831.

BY COLONEL HALL, OF QUITO.

(*Communicated by the Author.*)

EARLY in July, 1831, M. Boussingault, well known to the scientific world, arrived in Quito, for the purpose of examining the most interesting points of the country, especially with a view to their volcanic and mineralogical character. I gladly embraced the opportunity of making new or repeating old excursions, in company which would render them doubly interesting.

Before entering into the detail of our various rambles, it may make them more intelligible to premise a short general sketch of the mountainous region they embraced.

By casting a glance on the Map of Colombia, compiled by A. H. Bruè, it will be observed that the portion of the great mountain chain, which may be called the Quitinian

Andes, reckoning from Mount Cayambo under the equator to Chimborazo, in lat. 1° 27′ 18″ S., is composed of two parallel ridges, connected by an elevated plain, on which stands the city of Quito, with its dependent towns and villages. Two transverse ridges, one of which, not indicated in the map, runs between Cayambo and Mohanda, a little to the south of Otovalo, and the other, betwixt Cotopaxi and Elenisa, known by the name of Tiopullo, divide it hydrographically into two basins, of which the northern empties its waters into the Guaillapamba, by which they are conveyed to Esmereldas, while those of the Southern are collected by the rivers of Achambo, and pass through the valley of Baños into the Pastaça and Marañon. The eastern of these two ridges is crowned by the lofty summits of Cayambo, Imbaburu, Antisana, Sinchulagua, Cotopaxi, Rumiñan, Tunguragua and Capac-Urcu, called by the Spaniards *El Altar*, while the western presents the no less aspiring masses of Pichincha, Atacazo, El Corazon, Elenisa, Carguirazo, and Chimborazo. Of these Antisana, Cotopaxi, Tunguragua, Capac-Urcu, Pichincha and Carguirazo present unequivocal traces of ancient or recent volcanic eruption. The effect of these gigantic pyramids, most of them covered with perpetual snow, on the general character of the scenery, is that of grandeur and sublimity, often approaching to gloominess. The diminutive vegetation of the cultivated plains offers no intermediate masses to break and soften the landscape: drear mountain-ridges meet the eye and bound the horizon in every direction. The clouds, almost constantly gathering round them, add to their sombre hue, though frequently they present pictures of striking interest. I have sometimes observed from Quito, four alternate strata of clouds and land on the face of Cayambo, its base shrouded by the mists rising from the intermediate valley of Guaillapamba; its centre lying clear above; a belt of clouds round the foot; its snow-clad crest, the summit of which towered over all, like a golden coronet reflecting the last rays of the setting sun. The mineralogy of this region is of the same uniform character with its landscape. M. Boussingault was tired of finding scarcely any thing but Trachytes betwixt Quito and Chimborazo. The few exceptions will be hereafter noticed.

It is not easy to determine the native character of the vegetation in a country long peopled and cultivated. The traveller is struck by the want of trees—an uncommon deficiency in South America—but it is natural to imagine the aboriginal forests have been long since destroyed, for the purposes of building and fuel. The thickets or copses which cover the central regions of the mountains continue to supply the latter; but timber of very indifferent quality must now be brought from a considerable distance. The only forest-trees, scattered over the inhabited country, are the *Capuli* (*Prunus salicifolia* of Humboldt); the *Arayan* (14. No. 6,*) an elegant species of Willow, (*Salix Humboldtiana?*) and a tree, called by the Indians *Quipua*, the seeds of which have the smell of Juniper, found in the sandy plains round Ambato. Even of these few, the three former seem rather domesticated than indigenous. I never met with them in any uninhabited part of the country, and wherever they appear they seem to have been planted for some purpose of utility or ornament. The fruit of the *Capuli* very much resembles a black cherry: the tree grows to a large size, and affords good timber of a reddish grain, though it is not sufficiently abundant to be an article of commerce. It is readily propagated in the driest and sandiest soils, and in two or three years affords both shade and fruit. The fruit of the *Arayan* is also eatable; the leaves when bruised have the fragrance of the *Myrtle*, (to which Natural Order it belongs,) but it is of slow growth, and difficult increase, and is therefore comparatively scarce. The graceful spires of the *Willow* give a picturesque effect to many of the towns and country seats, where it is employed like the Lombardy Poplar in Europe, which it resembles greatly, to form walks or *Alamedas;* but it must be owned it looks everywhere like a foreigner.

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* These Nos. refer to the specimens of plants sent by Col. Hall to Dr. Hooker, and which will be published in the succeeding Nos. of this Journal.—*Ed.*

With respect to the Shrubs and smaller plants of the table land, there is a marked difference betwixt the two basins already mentioned. Throughout the Northern, the hedges are composed of a species of *Euphorbia*, abounding in milky juice, of *Barnadesia spinosa*, *Duranta triacantha*, *Gesneria ulmifolia*, *Salvia rubescens*, two shrubs called by the natives *Souko*, several species of *Solanum*, a species of *Monnina*, and several syngenesious shrubs, interspersed with *Tacsonia tripartita*, *Alstrœmeria Caldasii*, *Passiflora—?* (11. No. 6.) *Datura sanguinea*, *Thibaudia? Rubus? Andromachia igniaria*, the bark of which is used for tinder, and a species of *Melastoma* called by the natives *Colka*, and used in conjunction with the *Hypericum laricifolium*, to produce a yellow dye; to which may be added, in more sheltered situations, two species of *Mimosa*, the only ones found at the elevation of above 8,000 feet. Among smaller plants, several varieties of *Calceolaria lavandulæfolia*, *floribunda*, *amplexicaulis*, *perfoliata? gracilis*, *integrifolia?* 2 species of *Œnothera*, a species of *Cleome*, and numerous families of Syngenesia, constituting the populace called weeds, contribute to form the epithet *siempre verde*, evergreen, bestowed by the Spaniards on Quito. In the ravines are found several elegant species of *Lilies*, though bulbous-rooted plants are by no means abundant round Quito, and the vallies and banks are clothed with *Sedum Quitense*, and a variety of Ferns and Mosses, among which grows a small orchideous plant with white flowers. The Southern basin, with the exception of the narrow vale of Baños, presents features strikingly different. After passing the Paramo of Tiopullo, we enter a country, the soil of which attests the volcanic eruptions of Cotopaxi, Tungaragua, and Carguirazo; plains of crumbled pumice-stone and barren sand extend from Callo to Riobamba. The hedges are formed almost exclusively of *Agaves*, the tall flower-stalks of which are employed in roofing; we find everywhere the *Cactus cylindricus*, *Tuna* and *coccinellifer;* the landscape no longer maintains the character of "evergreen," but wears the pale and yellowish hue of a perpetual autumn. The natural aridity of the soil is increased by the scarcity of rain; while, in the basin of Quito, the inhabitants reckon nine months of winter (meaning wet weather) in the year, those of Ambato and Riobamba can with equal certainty count on nine months of summer.

The mean temperature of the neighbourhood of Quito may be reckoned about 56°: that of the city itself is about 57°. The temperature of the Southern basin is rather bigher, and may be estimated at 60°. Every difference of elevation produces of course, a corresponding variation of temperature. The mean of the Paramos may be reckoned at 38°, and when we reach the limits of perpetual snow at 32°. There is a circumstance, worthy of notice, with regard to the temperature of elevated tropical regions, because it has a powerful influence both on animal and vegetable life; that is the UNIFORMITY of the yearly temperature, so different from our European seasons. Thus, as Humboldt observes, (*De Distributione geographica Plantarum, p.* 152.) the mean temperature of Quito is nearly the same with that of the South of France, yet a variety of European fruits, such as peaches, nectarines, grapes, figs, &c., which ripen well with even an English summer, never reach perfection in Quito, where the daily range of the thermometer throughout the year is from 48° to 65°. The plants of the Andes will, for the same reason, be with more difficulty naturalized and more readily degenerate in Europe than those of the Alps or of northern latitudes, when transported to warmer climates; since both in the Alps and in Lapland, there is an alternation of summer and winter, differing only in length and intensity from those of France or England, while the plants of the Andes are rarely exposed to a variation of above 17° throughout the year. They thus acquire, like the inhabitants, a constitution ill adapted to support great changes. I have never been able to cultivate the plants of the Paramos, even in Quito: the seeds refuse to germinate or the plants either perish before taking root, or preserve a brief and languishing existence. No doubt, other circumstances, such as atmospherical pressure and the action of light, co-operate, as Humboldt observes, with the effect of temperature; but these circumstances increase the difficulty of vegetable emigration. Another peculiarity of the elevated tropical regions, is the great heat of the sun's rays, as compared with the shade. I have seen a thermometer placed on the grass, at Quito, rise to 120°, which is equal to its utmost range at the level of the sea; while in the shade its extreme range is 60°—66°, in the high lands, and 80°—88° on the coast. It is for this reason that the heat seems more oppressive in Quito than in Guayaquil, there being frequently in the former a difference of more than 60° between the two sides of a street or wall, and these daily inequalities contrast more strongly with the annual uniformity of temperature already indicated, and still farther complicate the peculiarities of Andean vegetation. I have alluded to reflected heat, because it is that to which animal and vegetable life are subjected, and perhaps the only modification of the sun's rays which can be accurately examined.

It seems more easy to naturalize the vegetable productions of Europe in the regions of the Andes, than *vice versâ*. European flowers adorn the gardens, and European vegetables supply the tables of Quito, as of every part of the table lands. The introduction of the *Cerealia* is one of the few benefits conferred by the Spaniards on the New World. The Indigenes appear to have used only *Maize*, the *Chenopodium Quinua*, the *Potato*, and the *Oxalis tuberosa* or *Oka*. Barley meal constitutes at present the chief article of their diet; for bread, though cheap, scarcely falls within their scanty resources. Oats and Rye are, as yet, unknown, though well adapted to many of the poorer soils, especially the sandy tracts round Ambato and Riobamba. The same cause which prevents the perfection of European fruit, limits the number of those of native growth; about the elevation of Quito, we find none wild but the *Capuli*, a species of *Blackberry*, and, on sandy soils, the *Tuna;* Currants, Gooseberries and Raspberries seem adapted to the climate, but have not yet been introduced. Strawberries are abundant; but they are probably natives of Chili. Pears and Apples are plentiful, but small and ill-flavoured. The celebrated Peaches of Ambato remind the European traveller, less of the likeness than of the difference. *Pine Apples, Cherimoyas, Oranges, Limes, Aguacatis* (*Laurus Persea*), *Granadilla* (*Passiflora—?*) and other tropical fruits, are brought from the adjacent valleys or *Calientes;* but it may be supposed little improved by the journey. The idea of *perpetual Spring* is pleasing to the imagination: but the reality is purchased in the Andes by the want of those glowing forms and colours, which nature sheds over tropical climates, while the monotony of earth and sky, scarcely observable by the traveller, would be gladly exchanged, by the less fortunate resident, for the varied interest of European seasons.

Excursion to the Summit of Pichincha.

On the 16th of July, M. Boussingault, accompanied by Professor Jameson and myself, set out to visit the volcano of Pichincha. The city of Quito is placed immediately on the roots of the mountain, a circumstance to which it probably owes the security it has hitherto enjoyed from earthquakes. This advantage is indeed generally attributed to a miraculous image of the Virgin which is displayed on all occasions of danger, or rather when the danger is over; but the solidity of a rocky basis, compared with the sandy soils of Tacunga, Ambato and Riobamba, may be supposed considerably to assist the miracle. The deep ravines, which furrow the flanks of the mountain, called by the Indians *Guaicus*, extend into the town; and several edifices, one of which is the cathedral, are built on arches thrown over them. The road to Pichincha crosses one of these ravines, close to the convent of the *Recoletos* of *La Merced*, which communicates with the city by a brick bridge, the height of which is — feet above the bottom of the dell. It is evident from their perpendicular sides that these fissures have not been gradually formed by descending waters: we must therefore consider them as rents, caused by the action of the volcano, at a period beyond the reach of tradition, probably ere it had worked itself the present outlet, on the opposite side of the mountain. The first part of our ascent lay through the cultivated lands of a farm, belonging to the convent. Not only Barley, but Maize and Potatoes, are grown to the height of near 12,000 feet. The average limit of cultivation may be placed, everywhere in the Andes, at betwixt 11,000 and 12,000 feet, subject of course, to local variations. The farm of Licso, belonging to Antisana, round which have been observed considerable crops of Barley, is, by M. Boussingault's barometrical measurement, 11,440 feet above the level of the sea. The farms at the foot of Chimborazo are equally elevated. The mean temperature of these heights (about 45°), would be insufficient to ripen the harvest, without the aid of the sun's vertical rays, which supply the want of a continued summer-heat. After passing this zone of cultivation, we entered the more picturesque region of thickets and pastures, which extends from about 10,000 to 13,000 feet. This central girdle, which is nearly uniform in all the Quitenian Andes, is principally composed of *Barnadesia spinosa*, *Berberis glauca*, *Rubus glabratus*, *Hypericum laricifolium*, *Andromachia igniaria*, *Lobelia biserrata ?* a low bushy tree, called by the Indians, from the figure of its leaf, *Puma maqui*, (Lion's paw,) and a variety of syngenesious shrubs, among which is (5. No. 8.), distinguished for its fragrance, (20. No. 8.) a *Melastoma—?* with scarlet calyx and pale yellow blossoms abounds from nearly the level of Quito; various species of *Oxalis*, *Valeriana*, *Stellaria*, *Geum—?* (14. No. 8,) and *Viola ?* flourish in the shade. The *Fragosia aretoides*, mixed with *Eryngium*, and a species of *Alchemilla* with an orbicular serrated leaf, forms a turf remarkable for its rigid density, on the whole of the ascent from Quito: two species of *Andromeda*, and the rich *Fuchsia triphylla*, clothe the banks of a shady dell, through which the road winds close to a beautiful cascade, which, seen from Quito, resembles a stripe of silver ribbon. Humming Birds, attracted by the abundance of their honeyed food, frequent the whole of this region. Close to the waterfall is a small farm-house, near to which the springs called *Las Llayas de San Francisco* gush from Trachytic rocks, and are received in a stone fountain, sculptured with the arms of the Seraphic Order, *two hands clasped*, from which the water is conveyed by an aqueduct, across the stream of the waterfall, and thence in subterranean conduits to the convent in the city. It is justly esteemed for its superior purity, being unmixed with the melted snows which descend from the Paramo. On one occasion, when Professor Jameson and myself visited this spot, we found the fountain adorned with garlands of flowers by the devotion of the Indians; but its sculptured basin and ornaments are fast going to decay. No prospect can be more magnificent than that which presents itself from the neighbourhood of the cascade. Quito lies immediately below us like a map, while the sound of its many bells comes up, mellowed by the distance: its sugar-loaf hill (*El Panecillo*) seems but a garden mount. We look over the edge, called *El Chasque*, which masks the city on the east, and commands the cultivated valley of Chillo, in the midst of which rises the isolated hill of Ylalo; the horizon is bounded by the eastern ridge of the Quitenian Andes, on the northern extremity of which rises the snowy mass of Cayambe, designating the line of the Equator; nearly on our front is Antisana; still further to the south, Sinchulagua, and the beautiful volcanic cone of Cotopaxi form the eastern extremity of the heights of Tiopullo, which connect them with the western ridge of Elenisa, Corazon, Atacayo and Pichincha, thus completing a circle of vision, probably unequalled in the grander features of mountain scenery.*

Immediately after passing this interesting tract, we entered on the dreary regions, known in all the mountain country by the name of *Paramos* or *Pajonales*. The prospect above described is here hidden by the sinuosities of the ascent, and the eye rests on an unvaried expanse, covered by long grass, the faded hue of which harmonizes with a sky almost constantly clouded. It is at this elevation, from 13,000 to 14,500 feet, we find the cattle-farms, or *Hatos*, of the Andes. On many of these, several thousand head of cattle wander almost wild over an extent of country equal to an English county; but of this we shall make more particular observation, in our excursion to Antisana. The practice of burning the Paramos to improve the pasture, has probably contributed to diminish their Flora. We find, mingled with gramineous plants, *Swertia umbellata*, *Werneria nubigena*, *Andromachia acaulis*, *Gentiana sedifolia*, the corolla of which contracts and folds up on the touch; *Ranunculus Peruvianus*, chiefly near the ditches; *Senecio—?* *Valeriana—?* a species of *Plantago* and *Calceolaria ericoides*. Few wild animals inhabit these elevations; one of the few is a species of reddish Fox, which the natives call a wolf. Rabbits are often numerous, but different both in colour and habit from those of Europe. They are of a small size, with fur nearly resembling that of the hare, which they are also like in their mode of living among the rocks and bushes instead of burrowing. They are, in a certain degree, migratory, abounding at times and suddenly disappearing for several months. Deer are found on most Paramos. A beautiful species of spotted partridge also frequent the long grass, and the Condor is seen sailing down the dreary vales in quest of the carcases of such cattle as die by disease or accident. He frequently approaches so near as to startle the traveller by the rushing of his dark broad wings, and seems to watch his journey as if with the hope some sudden snow-storm might leave him a stiffened helpless prey. Nor is such an occurrence impossible or even very uncommon,

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* The accompanying plan (Tab. CXLI.) may contribute to make this description more intelligible. The point A may be supposed the specta-

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tor's place. (N. B. The plates referred to in this paper will be given with the next number of the work.)—*Ed.*

Storms of snow, hail, and wind are frequently formed in the Paramos with such sudden violence, that the herdsmen, in the duties of their office, are either buried in the snow-wreaths, with the cattle they endeavour to extricate, or sink beneath the icy wind, which rapidly benumbs their limbs and faculties with the torpor of death. In this state they are expressively said to be *emparamados;* and, when these hurricanes prevail, the inhabitants observe that *El Paramo esta bravo,* "the Paramo is angry;" and as some are more tempestuous than others, there are Paramos which have the term *muy bravos,* or "very passionate" constantly attached to them. Such is the Paramo of Assuay, betwixt Quito and Cuenca, which requires to be travelled with the precaution of a boisterous channel. Pichincha, on the other hand, is considered *muy manso,* or "very tame," though we did not escape a smart hail-storm, as we reached the rocky pinnacle called *Guagao Pichincha,* or *Young Pichincha,* in the Quichua language, to distinguish it from the mouth of the volcano, which they call *Rucu* or *Old Pichincha.* The crest of the mountain is formed by an irregular line of trachytic rocks, running nearly east and west, commencing with the pinnacle above-mentioned at the eastern extremity, and terminating in the mouth of the volcano, towards the west. The distance between them is about a league, which is doubled by the windings of the road. The figure of the Paramo, extending from this central elevation, is something like that of a hand, or an irregular star, the intervals between the fingers, or rays, being formed by ravines furrowed by the descending waters. (See TAB. CXLIII.) This appearance is general in the mountains of the Andes, where it has not been destroyed by recent volcanic eruptions. Close to *Guagao Pichincha* are the remains of a *Tambo* erected by the Indians, called *Inca Pilca:* nothing but the foundations are now visible. It seems to have consisted of a body and two wings, divided into very small apartments. We had now completed the ascent, having reached the height of betwixt 15,000 and 16,000 feet in about six hours, from Quito, at a foot pace. As it is important to arrive at the volcano early in the morning, we had determined on passing the night as near to it as possible. We accordingly proceeded for about a league on the western side of the ridge, to a ravine, on one side of which is a cliff which projects a little at its summit, so as to form a *Machai* or cave, if such a term can be properly applied to a spot of ground so partially sheltered. However, there was dry ground enough to sleep on as the weather was fine, and firewood to prepare our coffee and supper, after which indispensable arrangement we formed our beds of our mules' furniture, cloaks, &c., and slept comfortably, though the thermometer fell during the night to 32°. We awoke with a clear frosty morning, and while breakfast was preparing, collected a few plants, among which was an elegant *Calceolaria*, and a small *Andromeda*, growing on the rocks. The whole of this region, to the foot of the volcano, is rich in alpine plants. Among them are *Chuquiraga insignis*, very abundant; *Gentiana—?* the largest species of the Andes; three different *Lupines*; a large aquatic *Valeriana*; *Culcitium reflexum*, *C. nivale*, *Draba aretioides*, *D. alyssoides*, and still nearer to the sandy summit, *Espeletia* "*Fraylejon*," *Saxifraga andicola*, *Sida Pichinchensis*, *Cerastium densum*, and several Grasses.

With every respect for the authority of a naturalist and philosopher, so correct as Humboldt, I must here point out several inaccuracies in a passage quoted from his works, in Part V. of the Botanical Miscellany, p. 206. "Still higher," he says, "namely at an elevation of 3,500 mètres (1796 toises), the arborescent plants terminate." If we observe those slopes of the mountains which descend toward the table land of Quito, we find the region of arborescent shrubs rising everywhere to the height of 13,000 feet. Tunguragua is covered with copses to the elevation of 13,317 feet, by M. Boussingault's barometrical measurement. But, if we examine those steeps, which rise from the plains of the Marañon on the east, and from the forests of the Pacific on the west, we shall find not only shrubs, but even forests, ascending to nearly 14,000 feet. The tree (2 No. 8.) is seen near the Arenal on Chimborazo, and on the western side of Pichincha, at an equal elevation, forming large forests. The circumstance of our collecting abundance of fire-wood where we slept, is a proof that there is no scarcity of arborescent plants. "To between 2000, and 4100 mètres, (1026 to 2103 toises) the region of Alpine plants extends." This is still more inaccurate: none of the plants mentioned in this passage are seen at a less elevation than 14,000 feet, and more commonly, especially the *Fraylejon* and *Sida Pichinchensis*, at 15,000. The leaves of the former do not, by-the-bye, shelter the benighted Indians; although, from their resinous quality, they are useful for fuel. The *Ranunculus Guzmanni*, stated to have been "gathered by Guzmann upon the mountain Corazon, at an elevation of 2480 toises," I found in great abundance near the metallic vein of Condoraza, in the mountain of *Capac-Urcu*, at nearly the same height, 14,496. "At the height of 4100 mètres (2103 toises) the alpine plants give place to the grasses." The reverse is the fact. The *Paramos* or *Pajonales*, as we have seen, succeed to the central belt of copse or thickets, and are themselves surmounted by the region of alpine plants, which extends to the limit of perpetual snow. Professor Jameson and myself have often, in our excursions, admired the rich carpet of flowers, consisting of the *Gentianæ*, *Drabas*, *Lupines*, *Sida Pichinchensis*, *Alchemillas*, *Culcitia*, &c., which Nature seems to take a pleasure in spreading over the last confines of vegetable life. "At 4600 mètres, (2360 toises), there are *no* phænogamous plants under the Equator." In addition to what has been already observed, I must remark, that on Chimborazo, at above 17,000 feet, I found several in flower, specimens of which have been sent to Dr. Hooker. I am inclined to think there must be some mistake in the translation* of this passage, for Humboldt, himself, in his

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* The translated passages in question, have since been carefully collated with the original of M. Humboldt, and found correct. *W. J. H.*

Treatise "*De Distributione Geographica Plantarum, p.* 107," names the plants already mentioned and several others, as growing "Propter nives, altitudine 2000—2460 hexapodarum." But to return to our journey, we proceeded with a bright sunshine at the foot of the rocky ridge, commanding on our right an unbounded prospect over the woods of Esmeraldas, which extend to the sea-coast of the Pacific. The ocean is said to be visible in clear weather; but the mists evaporating from this mass of forest generally closed the horizon: the distance, in a straight line, is about eighty miles. The volcano soon rose before us, with its wall of dark rocks, contrasted by the pale sands, heaped everywhere round it, and extending over the plain below, giving a dull desolate appearance to the landscape. There is, at the eastern extremity, a wide gap, or break, in the rocky edge, which renders the approach to the crater more practicable than it would otherwise be. The ascent is, however, too steep to be attempted on horseback. We accordingly dismounted; and though the whole elevation is not above 500 feet, the toil of struggling up, knee-deep in loose sand, joined to the oppression of breathing the rarified atmosphere, obliged us to make such frequent halts, as would have appeared to a spectator below, ignorant of the circumstances, to denote any thing but pedestrian vigour. We took at least half an hour to ascend, while less than ten minutes brought us readily to the bottom, on our return. We reached the edge of the crater at about half-past 7; a few minutes' delay would have deprived us of the whole prospect; the clouds were fast rolling up the ravine, but two columns of smoke were distinctly visible, rising near the foot of a cliff, which seemed incrusted with sulphur. The activity of the volcano, a fact considered problematical in Quito, was thus placed beyond a doubt. The *form* of the crater is different from the idea commonly entertained of a kind of circular basin. It is an immense ravine, widening probably into a considerable valley, with a descent towards the woods of Mindo, that is, in a direction nearly opposite to Quito; the occasional eruptions are thus not likely to be dangerous to the city. The mountain is, however, frequently shaken with explosions, and lately a torrent of mud ruined the road leading to Mindo, which follows the banks of a river, descending from the mountain, and with which the ravine of the volcano seems to communicate. The colour of the rocks varying from dull red to cinereous-blue, their masses shivered on all sides into pointed pinnacles, so different from the general character of Trachytic formations, irresistibly impress on the imagination the idea of a period when a gulph of fire, since exhausted by its own efforts, vomited desolation over the surrounding country. The forests, which now cover the southern and western flanks of the mountain, are rooted in decomposed pumice. The whole plain of Quito presents the same appearance, although in a degree less striking, from the changes and admixture of the soils, produced by cultivation. It is to be observed, that the mud poured out from the volcanos of the Andes is much more readily adapted to vegetable productions than the indurated lavas of Etna or Vesuvius. This is strikingly manifest in the neighbourhood of Cotopaxi and Carguirazo, the eruptions of which are of recent date. Pichincha well deserves the epithet of "*Rucu*," (*old*) given it by the Indians. Its present commotions are the enfeebled efforts of age. Many centuries must have elapsed since it existed in all its tremendous power; for we find no record of its having done any considerable damage, either in the traditions of the Indians, which notice both the eruptions of Cotopaxi and the fall of the dome of Capac-Urcu, or in the more recent histories of the Spaniards. We reckoned, from the edge of the crater where we stood, to the sulphureous exhalations below, might be a depth of about 1500 feet. The possibility of a descent naturally suggested itself; and, at a subsequent period, the attempt was made. On the 28th of July, 1832, Professor Jameson, Don Pedro Negreto, Dr. Terry of the United States and myself, visited Pichincha for this purpose. We slept in the cave already described, and on the morning of the 29th proceeded to the edge of the crater. We found the descent less difficult than we had expected for about 300 feet, but here our progress was cut short by a perpendicular precipice. The point we reached is indicated by the extremity of the road in the *Sketch of the upper part of Pichincha*, (TAB. CXLIII.), and the section, (TAB. CXLII.) will show the nature of the descent.

We had been less than half an hour on the summit when the prospect below became shrowded in mists. We were amused by observing the warm air as it ascended to the brink of the crater and encountered the cold stream above, deposit its moisture in the form of cloudy wreaths, which floated round us. It is this opposition of temperatures which renders the volcanic glen almost constantly invisible from above. Of several excursions made for the purpose, this was the first in which I had obtained a view of it. The sulphureous vapour, scarcely perceptible while the crater is clear, is strongly pungent when condensed by the damp misty air, and contributes to its gloomy aspect—most imposing when its interior is most obscure. By M. Boussingault's barometrical measurement, the height of the volcano is 15,676 feet. According to Humboldt, it is 15,976; and according to the Academicians, who measured it in 1739, 15,606. The last observation is, in these cases, generally the most correct; and in all the comparative measurements of Humboldt and Boussingault, the superiority of the barometer of the latter must be taken into consideration. Calculating by boiling water, I had, on a former occasion, estimated the height at 15,704 feet. Water boils at 186°. Though snow frequently falls, it never remains long on Pichincha: what is brought to Quito is not snow, but masses of hailstones frozen together in the clefts of the rocks. The limit of perpetual snow under the equator is fixed by Humboldt at 15,736 feet, by Bouguer at 15,608, and by Leslie, from a calculation of the increased capacity of rarified air for caloric, at 15,207. Pichincha is, therefore, barely within this limit, whichever be the measurement we assume; but the line of perpetual congelation must also be presumed to admit of some local variations. The warm air, which ascends from the ravine of the volcano, has doubtless some influence in raising the general temperature. When a considerable portion of a mountain rises high enough to be covered with perpetual snow, the congealed mass has probably a contrary effect on the surrounding atmosphere, so that the line may descend somewhat lower than when a mere solitary peak is so elevated. We found the lowest limit of snow, on Cotopaxi, at 15,646: on Antisana, at 15,838: on Chimborazo, at 16,000: and on Cayambe, where a broad field of snow is spread over a gradual descent, as low as 14,217 feet. Generally, on all the Cordillera, the snow descends much lower in summer, that is in the dry season, from June to October, than in the rainy season, or winter. We visited Cotopaxi and Chimborazo in November and December, and Cayambe in October: the two former, when the winter had set in, and the latter at the end of the dry season.

Having finished our survey, we returned the same day to Quito, performing the descent in about seven hours.

Five eruptions of Pichincha are recorded in the Annals of Quito; viz., in 1533, 1539, 1560, 1566, when considerable masses of stone were carried down the ravine, adjoining Inca Pilca, into the plain, a little to the north of Quito, which is still called in the Quichua language, *Rumipamba*, or "the plain of stones." This eruption is not easily reconciled with the present figure of the volcano, unless we suppose it, as is frequently the case, to have broken out, not from the crater, but laterally from the neighbourhood of *Guagao Pichincha*. In October, 1660, it rained ashes for several days in such abundance as to cover the country to a considerable distance, in memory of which event, the festival of the "Virgin of Mercies" is still celebrated on the 27th of October, to whose miraculous image was ascribed the preservation of the city.

Excursion to the Obsidian Rocks of Quisca.

M. Boussingault having been informed of the existence of a mass of Obsidian, near the farm of Sicsipamba, on the eastern ridge of the Cordillera, I accompanied him on the 27th of July for the purpose of examining it. Our road lay across the valley of Guaillapamba, the upper half of it being known by the former name, while the lower part is called after the river which flows through it. The hill of Ylalo forms the division. Adjoining to Quito, on the north, is a level grassy plain called the Ejido of Anaquito. After crossing it in a north-easterly direction, the road descends precipitously to the village of Guapulo, placed in a ravine, formed by the stream of Machangara, which runs close to the city. About midway in the descent stands the elegant church of Guapulo, famous for its architecture, its shrine of coral and miraculous images. In coming from Quito, the traveller looks down upon its dome and towers, which seem planted in a lonely dell, while, to those ascending from the valley, it appears placed on a mountain. The huts of the Indians, screened by the vegetation round them, are scarcely visible in the landscape, so that the edifice stands an object of lonely beauty. At the farther end of the village a stone bridge crosses the Machangara, close to which a small tributary stream precipitates itself in a cascade, shadowed by trees. The height of the bridge, above the level of the sea, is 8056 feet. The descent from Quito is consequently 1468 feet. The profusion of *Mimosas* along the road-sides indicates the approach to a milder climate. Emerging from the ravine, through which the Machangara pursues its course to the Guaillapamba, we reached the village of Cumbaya, which consists of little more than Indian cottages grouped round a church. The farms and gardens in the neighbourhood produce Sugar-cane, which, at this elevation, requires three years to ripen. Oranges, Limes, small Aguacates, Granadillos, a species of Walnut-tree, with a round fruit, called Tortes by the inhabitants; we also found the *Mimosa*—? whose button-like yellow blossoms are esteemed for their fragrance, and some trees of the *Sapindus saponaria* in gardens; the vegetation, however, is by no means luxuriant;

the soil is a hard ferruginous clay, which needs artificial irrigation, and this is scanty, because both the river of Guaillapamba and its tributary streams bury themselves in deep ravines. Between Cambaya and Tumbocó it is crossed by what is called a *Socabon Bridge.* This is one of those contrivances which seem entirely due to the Spanish settlers. The Incas employed bridges of twisted bushes to cross the larger rivers; and I am not aware that in Europe we have any model of a Socabon Bridge. *Socabon* means a cavity. To form the bridge, a tongue of land is selected on one side of the river, capable from its breadth of being readily perforated: an arch, or vault, is then worked through it, without aid of masonry or timber: when it is completed, the channel of the river is deepened so as to give the current a direction through the aperture, and the old bed being thus abandoned, the perforated tongue of land forms a bridge over the new course of the stream. This may be more readily understood by the sketch, (TAB. CXLIV.) where A is the original bed of the river; B the perforated tongue of land; C the road. The traveller, who is not aware of the circumstance, is often puzzled to find how he has crossed the river, without having met with a bridge. One might, at first sight, imagine these bridges the work of Nature, but the old course of the stream plainly indicates that its change is artificial. We shall meet with another of these bridges in our present excursion, and there is a third near Guaranda, on the road from Guayaquil. The inhabitants of Aculato have been several years employed in forming one to cross the river near this town. These bridges have the advantage of needing no repairs, and of lasting, one cannot say how long.

The village of Tacabuco is larger than Ambaya, but nearly of the same description; the distance betwixt them is almost a league. Proceeding about two miles, we crossed the ravine of Chichi. This is one of those tremendous fissures which are frequent in all the district of Quito. It extends from the base of the eastern Cordillera to the course of the Guaillapamba. Its depth is about 1000 feet, more, rather than less. Its sides, everywhere perpendicular, denote it to have been suddenly produced by volcanic action. A narrow winding path leads to the stream which flows through it. On the eastern side we find carbonate of soda. From the ravine it is about a league to the farm of Sicsipamba, where we arrived early in the evening. The Spaniards have little love of a country life, and this taste, or distaste, they have communicated to their South-American descendants. In the whole territory of Quito, and we may extend the observation as far as Cuenca and Guayaquil, there are not more than half a dozen country residences, which display any attention to decency or comfort. In the whole valley of Chillo we may reckon two: one belonging to the Marquis of San Jose, and the other to D. Vicento Aguirro. All the rest, though several of them have been constructed at a considerable expense, are monuments of neglect or decay. As they are almost all built on one plan and differ only in size, one description will serve for all. The style of architecture is monastic. A large quadrangle, surrounded by corridors, on one side of which are a chapel and a stone cross, or the remains of one in the centre: gloomy apartments, generally filled with grain, hides and lumber, in which the traces of painting on the mouldering walls and ceilings indicate that they were once intended to be inhabited, and one of which, more conspicuous by its dirt and litter, is the residence of the *mayordomo*, or bailiff, and his family: not a pane of glass to exclude wind, and scarcely a door will close on its hinges:—such is a farm-house, or rather, I should say, such are the farm-houses in this country. But to make amends for these defects, we find abundance of open corridors and *miradores*, or "*look-outs*," as if plenty of fresh air were the only desideratum on the summit of the Andes. A few rose-bushes sometimes indicate the site of a garden; where, however, little is cultivated but *alfalfa* or tares, for fodder; for of all arts, that of gardening is least understood or practised in South America.

Sicsipamba is the property of Don Jose Feliz Valdineso, one of the richest inhabitants of Quito; and both the establishment and our accommodations were superior to what are commonly met with. The house is situated immediately on the base of the eastern ridge of the Cordillera; behind it rise the Paramos, which form the pasture and breeding grounds of the farm. Cattle raised in these high lands are afterwards fattened in water-meadows or *potreros*, for the Quito market. The Indians, who are properly the serfs of the estate, live in cottages, scattered over the demesne. They amount sometimes to several hundred, especially on the tillage farms, which have often attached to them manufactories of coarse cloths, or *Bayetos*. Few of these Indians speak or understand the Spanish language. The *Quichua*, on the contrary, is generally spoken by the country proprietors and overseers or bailiffs. Although it scarcely enters into the limits of these sketches to give a detailed account of the present condition of the aboriginal possessors of the soil, who still constitute the mass of the population in the south of Colombia, some few remarks may be interesting. Those who desire a full and perfect statement, may consult the "Secret Memoirs," presented to the Court of Spain, by the two Ulloas, and first published in Spanish and English by Mr. David Barry in 1826. The importance of this work can be duly appreciated only by those, who, from residing in the country, can vouch for its exactness. It is curious to compare the copious and interesting information it contains with the meagre details given on the same points by the same authors, *when writing for the public*: nor is it to be wondered the court of Spain should have buried in oblivion a work which is the severest condemnation of its colonial policy. I regret that so far as regards the condition of the Indians, it is to the present day, classical authority. In what relates to the oppression of the Corregidors there is some change. The Indians are no longer compelled to purchase *spectacles* or *silk stockings*, if the Corregidor happens to have them for sale; but, on the other hand, they are, on all occasions, the *beasts of burthen* of the government, as well as of their masters, their curates, and indeed of every body who chances to lay hands on them. "The Indians," say the Ulloas, p. 238, "are real slaves; and it would be fortunate had they but one master to whom to yield the fruit of their toil: but they have so many, that while they labour to serve all, not the slightest part of their hard earnings remains for themselves." In order that these remarks may not be considered unfounded declamations, it is sufficient to keep in view the following account of the actual condition of the Indians, considering it as applied only to those of the Equator, because both in Venezuela and New Granada, they are fewer in number and little different in rights and condition from other free labourers, while I cannot speak with certainty, as to what changes may have taken place in Peru. The observations of the Ulloas extend to the whole ancient Empire of the Incas, that is, from Bolivia to the northern boundary of Quito. We may consider the number of Indians in the two departments of Quito, and Cuenca as amounting to not less, and probably more, than 300,000 souls; the entire population being about 500,000. They constitute the whole mass of agricultural and manufacturing labourers, and as such, at least nine-tenths may be considered as *adscripti glebæ;* while the remaining tenth are artizans or free labourers in the towns, and some few of them petty proprietors. The condition of the great majority is as follows:—Every estate or farm, and many farms which have *obrages* or manufactories annexed to them, has a certain number of Indians, called *Conciertos* or *Ganyanes.* The wages of a *Ganyan* are twenty dollars a-year; but by a year is meant 360 days of labour, marked on a species of tally, by a line or *raya.* Twelve 360 rayas complete the year's salary; but as a deduction is made for the numerous festivals of the Catholic Church, for all the Sundays and Saturdays of the year, (the latter day being allotted to the cultivation of a small piece of ground given him in addition to the salary,) the Indian, even supposing him never to lose a day's labour voluntarily, labours about 18 months for the 20 dollars: but every year the government requires of him a tribute of 3½ dollars, so that for the annual support of himself and family he has remaining about 10½ dollars. This sum, however, is not paid him in money, but in grain, potatoes, and other produce of the estate, at the same time that every loss on the property, as of sheep, cattle, or whatever he may be charged with, is inexorably placed to his account. In this situation he necessarily gets into his employer's debt; and this debt, which goes on continually augmenting, is made a pretext to enslave him and his family for ever; for though he may change his master, as the debt is transferred with him, he is equally the slave of each succeeding employer. It is superfluous to enumerate all the petty vexations, frauds and tyrannies to which such a state exposes him. Where power and avarice are placed in competition with ignorance and weakness, the result is easily calculated. It is true that in each district there is a magistrate, called "Protector of the Indians," whose duty it is to see justice done them, in the settlement of their accounts and other disputes with their masters; but if *justice* is in South America a rare commodity, we may imagine how much of it falls to the share of the unfortunate Indian. I now continue the extracts from the "Secret Memoirs."—"Whatever may have been said of the tyranny of the Encomenderos towards the Indians at the time of the conquest, we can scarcely believe, after what we have seen, that it equalled that of the Spaniards and half castes at present. If they were then the slaves of the Encomendero, at least they had but one master; but they have now the Corregidor, the manufacturer, the farmer, his overseers, and what is still more scandalous, the very ministers of the altar, all of whom treat the defenceless Indians with greater cruelty than the greatest exercised on Negro slaves. To form a perfect idea of the manufactories (*obrages*), we must consider them as a galley rowing incessantly during a calm, and destined never to reach a haven of rest. The labour commences before the light of day, when each Indian is locked into the room in which is assigned him his daily task. At mid-day their wives bring their miserable pittances of food, after which the doors are again closed on them. At nightfall the overseer enters to collect their tasks. Those who have been unable to conclude them are chastened by the overseers, without hearing reasons or excuses, with lashes by the hundred, for this is their only mode of reckoning them, and are left shut up in the prison; and although the whole building is nothing else, there is always one room with stocks for their more peculiar and more barbarous punishment. During the day the master and his overseers make frequent visits, when the least symptom of neglect is punished in the same manner, with stripes, which are repeated in the evening when the task is delivered. This punishment is the more cruel, as they are not the less compelled to pay from their earnings the deficiency in their daily labour; and as the debt goes on increasing from year to year, it furnishes a pretext to the master to enslave not only the Indian but all his family. The consequence of this barbarous treatment is, that the Indians quickly fall sick, partly from this repeated punishment, and partly from the bad quality of their food. The hardest hearts would be moved to see them brought out dead and already reduced to skeletons; for the greater part of them die with their tasks in their hands."—p. 270—280, Spanish Edition.

Upon such a system was built the manufacturing prosperity of Quito, destroyed in great part by the freedom of commerce, and still regretted by most of the proprietors of the country. Let us now quote from the Ulloas the benefits the Indians have derived from the introduction of Christianity.

" As soon as these curates take possession of their churches they commonly bend all their efforts towards amassing wealth, for which purpose they have invented a variety of practices, by means of which to extort from the Indians the little that might escape from the grasp of the Corregidors. One of these is the practice of brotherhoods, which are so numerous in every village that the churches are full of saints, each of which presides over a brotherhood; and, in order that the

Indians may not leave their work, the celebration of such saints' days as fall in the week are transferred to the Sunday. When the Sunday arrives, the wardens of the feast must collect 4½ dollars, which is the price of the mass; as many more for the sermon, which consists of merely four words in praise of the saint, pronounced in the Indian language—anything, in fact, which comes uppermost; and then as much more for the procession, wax and incense, all of which must be paid in ready money down, because the dues of the church admit of no delay. After which comes the customary present to the curate of two or three dozens of fowls, as many chickens, Guinea-pigs, eggs, sheep, and a hog, if they have it; so that when the saints' day comes, the curate sweeps off everything the Indian and his family have been able to raise in the whole year; and if he has not animals of his own, he must buy to make up the deficiency, and if, as usually happens, he has no money, he must pledge his person and labour for the debt. As soon as the sermon is over, the curate reads the names of those who are to be wardens the next year, and, if they refuse the nomination, they are compelled by stripes to accept it; and when the day comes, until the money is ready, the curate delays the mass and sermon, though it be till the evening, as we often witnessed. To show the profit derived from these feasts, we will relate what was told us by a curate of the province of Quito, viz., that in them, and in the commemoration of the dead, he collected every year above 200 sheep, 6000 fowls and chickens, 4000 Guinea-pigs,* and 50,000 eggs. Besides the *Feast of the Brotherhood*, there is no Sunday or feast day in the year, on which the festival of some saint is not celebrated, besides the month of the defunct, when all the Indians are compelled to bring offerings to the churches, of the same kinds as at the feast, which are placed on the graves, and while the curate repeats a response upon each, his servants collect the offerings. This lasts all the month of November. It is customary to make an offering of wine; but as this, in many places, is not to be had, the curate hires out a bottle of his own, which is passed on from grave to grave, at a real or two for each. By these and similar extortions, a curacy, the legal rent of which is 700 or 800 dollars, is made to produce 5000 or 6000, and often more."—p. 335.

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* In this country Guinea-pigs are used as an article of food.

"It may be supposed that after the curates have extracted all the gain they can from the Indians, they do the same by their wives and children. For this purpose, while the curate *devizes* on his part (for this is the name they give to tyrannizing), he recommends his concubine to do the same on hers. The female, known as such in all the parishes, takes charge of the Indian women and children, and assigns to each a task of cotton or wool to spin; while to the oldest and most useless, she distributes fowls, which they must breed and maintain, and should any die or be lost, make good the deficiency. On feast days the Indians must work on her farm with their oxen, if they have them: they plough, sow and reap with no expense but the order; and the curate dispenses with the duty of rest and religious worship on the days set apart for them to serve himself and his mistress."—p. 339.

"As they treat the Indians while alive, so do they use them when dead; for rather would they leave their bodies to be devoured by dogs and vultures, than inter them without receiving the burial fees, though these should be collected by begging; but should the deceased leave any property, the curate, however the relatives may oppose it, makes him a pompous funeral and carries off for his dues everything he possessed, leaving his children and family to beggary."—p. 341.

It may be imagined, as the Ulloas observe, with such treatment and such examples, what kind of Christians the Indians make. Just as good as would be an equal number of parrots taught to repeat the same creed as is taught to the

Indian, who affixes to it neither meaning nor interest. After what has been observed of the conduct of the curates, it affords but a feeble consolation to humanity, to be informed that the only step taken by the Constituent Congress of the Equator in 1830, in favour of the Indians, that is, of the mass of the inhabitants, was "*to recommend them to the paternal care of these curates.*" The first Columbian Congress in Cuenca in 1821, among many laws, indicative of a humane and liberal feeling, passed one in favour of the Indians, placing them on a footing of equality with the rest of the inhabitants; but in the south this law has ever been a dead letter. The triple interest of the government, the clergy and proprietors, is too strong to yield to the feeble cry of outraged humanity, yet there is "retribution even here." The degraded and servile mass of the Indians can form no solid basis for the social edifice. They stand politically only as so many beasts of burden: and the consequence is, that the remaining inhabitants, few in number and depraved by examples of slavery and oppression, have shown themselves, of all the South Americans, the most incapable of establishing a free government, and the easiest victims of the feeblest despotism.—But it is time to resume our journey.

On the morning of the 28th we set out for the *Paramos*, accompanied by the bailiff and servants of the farm, driving along 20 mules and horses, that we might change our cattle on the road. After ascending for about two hours, we met with a considerable mass of Obsidian, slightly projecting from the surface of the ground; but whether an isolated block, or part of a considerable formation, the locality scarcely enabled us to conjecture. As we continued to ascend the road, the weather became worse. A continued storm of sleet and snow, with a piercing wind, annoyed us considerably. The whole Paramo was mud and bog, and we crawled over the inequalities of the surface for about three hours, till we reached the cave of Quisca, the object of our expedition. It is a projecting cliff, rising to about 40 feet high, and extending about 50 yards, formed entirely of Obsidian of a bright coffee colour, richly veined and beautifully transparent. It is traversed by a minute vein of *perlstein*, towards the base. From the appearance of the cliff, we may suppose it to form a considerable stratum above the trachytes. M. Boussingault thought it probable the cliff had been partially hollowed out by the Indians, who anciently resorted to it, to procure materials for their arms and utensils. Obsidian is, I believe, generally considered a pure volcanic product, and Humboldt imagined the fragments scattered through the country to have been thrown out by the eruptions of Cotopaxi; yet in the neighbourhood of this volcano we found no traces of it, while here is an immense formation *in situ*, constituting apparently an integral part of the Cordillera. We remained only long enough for M. Boussingault to collect specimens, for the situation was by no means attractive. The thermometer stood at 38°, 11 A.M. We had not brought the barometer, but the vegetation and ascent indicated an elevation of betwixt 14,000 and 15,000 feet.

The next day on our return, we passed the farm of Oyamburu, memorable for being the southern extremity of the base measured by the Academicians on the adjacent plain. In the court-yard of the ruinous farm-house we found the stone on which they inscribed the compendium of their operations, published in their works. They had also erected a pyramid at each extremity of the base, but the barbarism of the inhabitants had long destroyed these monuments of science:—the stones were scattered, and the level plain extending from Oyamburu to the ravines of the Guaillapamba alone indicates by its uniformity the site of their measurements. We passed from Oyamburu to the village of Puembo, placed on the edge of the ravine of Guambi, and crossing that of Chichi by a *Socabon* bridge, arrived at Tumbaco, and returned the same afternoon to Quito.

(*To be continued.*)

ANALYSIS OF THE PROCEEDINGS OF THE SOCIETY OF NATURAL HISTORY, IN THE ISLAND OF MAURITIUS, DURING THE YEAR 1833.

(*Read on the 24th day of August*, 1833.)

Botanical part: drawn up by L. BOUTON, Vice-Secretary of the Society, and Correspondent *of the Museum of Natural History at Paris.*

THE year which has just elapsed is far from having proved fruitful in botanical labours; still some few cannot fail to be interesting to Science. M. W. Bojer has described and figured four remarkable plants, all natives of the great island of Madagascar, or of the numerous adjoining Archipelagos. One of these, long cultivated in some parts of Mauritius, at the garden of Monplaisir, at Reduit, &c., belongs to the family of *Leguminosæ*. As its aspect and habit offer many points of similarity to *Poinciana regia*, (Bojer,) it had been probably confounded with that species; but this beautiful tree having flowered for the first time in April last, its inflorescence presented characters so different from *Poinciana*, and even from all other *Leguminosæ*, that M. Bojer found it needful to establish a new Genus for it, which he has dedicated to the learned and worthy patron of our Society, the Honourable Sir Charles Colville.*

This Genus, which, according to De Candolle's system, will rank in the Tribe CASSIEÆ, is named by M. Bojer

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* This plant has since been figured in the *Botanical Magazine, tab.* 3325.

Colvillea racemosa. It is a tree 40 or 50 feet high, with tender and brittle wood. The extremities of the branches bear long racemes of velvety *blossoms*, of a fine red colour: the *calyx* is globular, tomentose, 2-lobed; the upper lobe large, straight, divided in 3 or 4 teeth, marked with as many nerves; the lower one smaller, linear-lanceolate: *corolla* pentapetalous: *vexillum* of a singular shape, reniform and convolute, *i. e.* rolled spirally inwards: *carina* pubescent, longer than the alæ, of 2 petals: *alæ* oval-lanceolate: *stamens* 10, their *filaments* free, unequal, downy at the base: *ovary* subsessile, compressed, lanceolate: *style* filiform: *stigma* sharp-pointed: *legume* bivalved, straight, many-seeded: *seeds* elliptical, compressed.

It was in 1824, that M. Bojer first saw this magnificent tree, which he found, bearing fruit only in the Bay of Bombetoe in Madagascar; and from the seeds which he then collected, all the individual plants, now growing in Madagascar, are reared.

Another plant which M. Bojer has made known to the Society, belongs to the Genus *Barreliera.** It grows in fields in the province of Saccalaves at Madagascar, whence M. B. introduced it to the gardens of this country, where it thrives prodigiously and flowers almost all the year. Its yellow flowers, crowded in thick spikes and partly covered with coloured bracteas, its glossy green leaves, marked with red nerves, render it a peculiarly desirable species. M. Bojer has named it *Barreliera monostachya.*

The third plant is a species of *Cassia*, which grows spontaneously in stony barren spots around the city of Tannanarivou, the capital of the province of Emirena in Madagascar. This *Cassia* is remarkable for its fibrous, capillary roots, which bear at their extremities little fleshy tubercles. The leaflets are from 30 to 35 in number, linear and mucronated: the fruit straight, beset with some scaly bristles. M. Bojer calls this species *C. filipendula:* we do not possess it at Mauritius.

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* M. Bojer deems it more conformable to Etymology thus to spell this name, which is a Genus dedicated to Father Barrelier. It is the *Barleria* of authors.

Lastly, M. Bojer has described a beautiful kind of *Ipomæa*, which he has named *I. glaberrima.* Its aspect presents much affinity with *I. Bona Nox;* but it differs essentially in the capsule, the seeds of which are black and furnished at the top with a tuft of silky hairs. The *Ipomæa glaberrima* grows in the island of Seychelles Archipelago, at Comora, and is also found on the eastern coast of the African Continent, at Madagascar, and at Diego Garcia. It is cultivated in some gardens of this island, and blossoms in September and October.

Finally, M. L. Bouton has made known 2 species of *Geniostoma*, which grow in the interior of the thick forests in Mauritius, he has named one *G. pedunculata*, in reference to the long footstalks which support the fruit, and the other *G. cordata*, from the heart-shaped form of its foliage. These two species are perfectly distinct from the *Anassa* or *Geniostema Borbonica.*

M. L. Bouton has communicated some details on different plants which exist in the Mauritius, whether indigenous or cultivated, and which are new to Science, or have been hitherto known by incorrect names. By this means M. L. Bouton has ascertained, through his communications with the scientific men of Europe, and chiefly with Professor Hooker of Glasgow, that a *Terminalia* cultivated at Monplaisir, and which flowered for the first time in 1830, is the *T. Bellirica* of Roxburgh. He has also established the fact, that *Sandoricum Indicum* is the correct appellation of a tree which is cultivated in several parts of the island under the name of Bastard Mangosteen, and is enumerated in the catalogue of Mauritian plants, as *Trichilia costata.*

M. L. Bouton has likewise collected many of those Ferns which adorn the great forests of Mauritius, and convinced himself that several species grow in this country which are not mentioned as so doing, in the great enumerations of plants. For instance, *Polypodium cultratum*, which, according to authors, inhabits Jamaica and Martinique, is also found here on the trunks of old trees, at Nouvelle Découverte, and in the forests which skirt the Grand Bassin. A little *Lycopodium*, bearing much similarity to *L. Helveticum*, and named by Desvaux *L. pusillum*, grows, according to the latter writer, in Bourbon only, but has been gathered by M. Bouton on the damp bark of old trees in our woods. *Aspidium molle* and *Nephrodium pectinatum*, the first of which is stated by Willdenow to be a native of St. Leon of Caraccas, and the habitat of the other is unknown by that author, both grow in Mauritius.

A short description has been given by M. Bouton of a species of *Spondias*, indigenous to Mauritius, and which he has met with on Long Mountain, in dry and barren soil. It is remarkable for the elegant form of its compound leaves, the leaflets of which are marked with red nerves and covered with close-set, silky and soft hairs. At Professor Hooker's suggestion, it has been called *S. pubescens*.

DESCRIPTION OF MALAYAN PLANTS.

By William Jack.

[Continued from Vol. iii. of First Series, p. 89.]

HEDYCHIUM SUMATRANUM. *W. J.*

Spica imbricata nutante, corollæ labio bifido, laciniis oblongis divergentibus.

Gandasuli Utan. Malay.

From Saluma, on the west coast of Sumatra.

Stem erect. Leaves alternate, short-petioled on their sheaths, lanceolate, very entire, very smooth, parallel-veined; above a foot in length. Sheaths smooth, prolonged into a very long ligula. Spike terminal, nodding, short, dense, strobiliform. Bracts lanceolate, as long as the calyx; within this the ovary is embraced by a tubular bract about half the length of the other. Flowers numerous. Calyx superior, tubular, oblique at the mouth. Corolla long, outer limb three-parted, with long narrow segments; two segments of the interior limb much shorter and broader; the third segment or lip, which is united to the filament, bifid, the divisions narrow and diverging. Filament very long, embracing the style. Anther recurved, naked. Style length of the stamen. Stigma thick. Ovary pilose, three-celled, several-seeded. Nectarial bodies oblong.

OBS. This is a handsome species, and though its flowers are not so large and showy as those of the *H. coronarium*, this is in some degree compensated by the greater number which expand at one time. It is the first wild species I have met with in the Eastern Islands.

ALPINIA ELATIOR. *W. J.*

Scapis radicalibus elatis, spicis ovatis, corollæ labio integro basi mutico, foliis basi subcordatis glabris.

Bunga Kenchong. Malay.

Found on Pulo Nias, also at Ayer Bangy, on the west coast of Sumatra.

The stems are from five to eight feet high, round, somewhat compressed, smooth, striated; leaves alternate, bifarious, petiolate on their sheaths, ovate-oblong, broad, subcordate at the base, acuminate, very smooth on both sides, polished above, striated with fine parallel nerves; from one to two feet long. Ligula of the sheaths rounded. Scapes rising at a little distance from the stems, two or three feet high, erect, round, smooth, invested by sheaths which are rounded at their points and mucronate below the apex. Spikes short, thick, ovate, compact, densely covered with flowers. The lower bracts are of a fine rosy colour, large and spreading, so as to form a kind of involucre to the head; the upper bracts are shorter, imbricated, oblong or tongue-shaped, rosy, with white ciliate edges, each supporting a single flower. The involucel or inner bract, which embraces the ovary, is tubular and irregularly bifid, being cloven more deeply on one side than the other. Calyx reddish, deeply cloven on one side, by which the three regular segments become secund. Corolla; outer limb three-parted, segments nearly equal, erect, the upper one rather the largest; inner limb unilabiate, longer than the outer, lip ascending, involving the anther, deep purplish red with yellow edge, rhomboid-ovate, entire, somewhat crisped at the point, without spurs or sterile filaments at the base. Stamen shorter than the lip; anther naked. Style as long as the anther. Stigma thick, triangular, anteriorly concave. Ovary sericeously pilose, three-celled, many-seeded.

Obs. This is a very remarkable species, easily distinguished from the other *Alpiniæ* with radical inflorescence by the great height of the scapes, and the fine rosy colour of the lower bracts.

ALPINIA CAPITELLATA. *W. J.*

Foliis longe petiolatis supra glabris, racemo terminali composito, capitulis florum bracteis involucratis.

In the interior of Bencoolen.

Stems four or five feet high. Leaves alternate, bifarious, long petioled on their sheaths, broad lanceolate, fine-pointed, entire, parallel-veined, smooth above, slightly tomentose beneath. Sheaths villous near the top, terminating above the petioles in a long ciliate ligula. Raceme terminal, compound, inclining, red. Flowers in heads, which are embraced by large round bracts. Calyx tubular, three-cornered, nearly entire. Corolla; outer limb three parted, the upper segment fornicate; the inner limb unilabiate, of one large coloured segment. Stamen one; anther two-lobed, naked. Ovary tomentose, three-celled. Style slender. Stigma concave.

Obs. The peculiar manner in which the involucral bracts embrace the capitulate flowers and subdivisions of the panicle, forms a good distinctive character. The whole inflorescence is stiff and rigid, and wants that copiousness and richness which mark the greater part of this splendid genus.

GLOBBA CILIATA. *W. J.*

Foliis ovato-lanceolatis nervis supra pilosis, paniculâ terminali erectâ, antherâ bicalcaratâ.

Puar Amus. Malay.

Stem slender, erect, from one to two feet high, somewhat compressed, spotted towards the base with purple. Leaves alternate, bifarious, subsessile on their sheaths, ovate-lanceolate, rounded at the base, acuminate, entire, the upper surface furnished with erect hairs disposed in lines along the principal nerves, lower surface smooth, dotted under the lens with minute papillæ; about 4 inches long. Sheaths striated, smooth, ciliate along the margins, extending very little beyond the petioles, and there bifid. Panicle terminal, nearly erect, with alternate, divaricate, somewhat rigid branches, on which are disposed alternately several subsessile, yellow flowers. Bracts lanceolate. Calyx trifid. Corolla orange-yellow, two-bordered, the exterior three-parted, of which the upper segment is largest and concave; the inner consisting of two smaller segments alternating with the outer ones. Lip elevated on the lower part of the filament and reflexed, emarginate, with a purple spot in the centre. Filament long, tubular. Anther with two subulate recurved horns or spurs. Style simple. Nectarial bodies long and linear. Ovary containing several ovules.

Obs. It is a small delicate species, grows in moist hollows on the sides of the hills and among the forests in most parts of Sumatra. The ciliary lines of hairs on the upper surface of the leaves distinguish it from most of its congeners.

ARISTOLOCHIA HASTATA. *W. J.*

Foliis hastato-trilobis glabris, racemis axillaribus, perianthio basi inflato, laminâ erectâ ellipticâ marginibus revolutis.

Found at Nattal on the west coast of Sumatra.

Suffrutescent; branches long, spreading over the neighbouring shrubs, but not twining, angulate, jointed, smooth. Leaves alternate, petiolate, from six to ten inches long; hastately three-lobed, middle lobe elongated and terminating in a blunt acumen, very entire, very smooth, five-nerved, and strongly veined. Petioles two inches long, thick, round, channelled above. Racemes axillary, longer than the petioles. Flowers alternate, pedicellate, somewhat distichous; rachis flexuose. Perianth superior, purplish-red, smooth without, inflated at the base into an ovate six-angled ventricle, from which rises an ascending infundibuliform curved tube with revolute margins; lamina erect, elliptic, revolute at the sides, tomentose on the inner surface, as is also the inside of the tube. Style short, thick. Stigma orbicular, peltate, divided on the summit into six conical erect lobes. Anthers sessile, regularly arranged in a circle below the stigma, six in number, each consisting of two lobes, which are 2-celled and deeply furrowed along the middle. (As these are not arranged by pairs, might they not with equal propriety be considered as twelve distinct two-celled anthers?) Ovary oblong, obtusely six-angled, six-celled, many-seeded.

Obs. This is a large and very beautiful species of *Aristolochia,* remarkable for the size and form of its flowers. The ventricle at the base is large, and the narrow urn-like tube rises upwards with a very graceful curve. In this species the anthers might properly be considered as twelve in number, each two-celled, as they are all arranged at equal distances round the stigma, and it seems questionable whether the Genus itself ought not to be referred to Dodecandria in place of Hexandria. The arrangement of the anthers by pairs in the other species does not appear to necessitate the supposition of a deviation from the usual structure in ascribing to them four parallel cells in place of the more usual number of two, nor does the analogy of other cognate genera furnish any thing opposed to the inference so strongly suggested by the present species.

BEGONIA. *Linn.*

The island of Sumatra abounds with *Begoniæ*, a tribe of plants which are chiefly found in moist shady situations at the foot of hills and in the recesses of forests. Being succulent herbs they are with difficulty preserved in Herbaria, and the specimens are frequently deficient in one or other of the parts of fructification. Descriptions from the living plants in their native soil are therefore particularly desirable, and in this view the following account of the species which have fallen under my observation will not be uninteresting. They seem to differ from all those described by Mr. Dryander in the first volume of the Linnean Transactions, and no great additions have been since made to our knowledge of the Genus.

BEGONIA CÆSPITOSA. *W. J.*

Subacaulis, foliis inæqualiter cordatis angulatis acuminatis glabris, pedunculis dichotome cymosis, capsulæ alis æqualibus obtusangulis v. rotundatis.

At Bencoolen.

Nearly stemless. Leaves petiolate, oblique, cordate at the base, with rounded slightly unequal lobes overlapping each other a little, somewhat falcate, rounded and sublobate on one side, straighter on the other, attenuated into a long acumen or point, spinulose but scarcely serrated on the margin, smooth, shining above, pale and punctato-papillose beneath; nerves 5—9, branched towards the margin. The leaves are of unequal size and vary somewhat in shape, the old ones being much rounder and more decidedly lobed than the younger ones, which have the point so much incurved as to be nearly falcate on one side. Petioles red, pilose. Peduncles often as long as the leaves, smooth, bearing a dichotomous cyme of white flowers. Bracts ovate, concave. Male perianth four-leaved, the inner pair smaller. Stamina numerous, collected into a head. Female perianth superior, three-leaved, two exterior large, subrotund, applied to each other as in the male flowers, and enclosing the third which is much smaller and oblong. Style trifid. Stigmata lunato-bifid, yellow and glanduloso-pilose. Capsule three-winged, wings nearly equal, obtuse-angled or rounded.

BEGONIA ORBICULATA. *W. J.*

Subacaulis, foliis orbiculatis cordatis crenatis glabris, pedunculis subdichotomis, capsulæ alis subæqualibus obtusangulis.

Interior of Bencoolen.

Nearly stemless. Leaves petiolate, subrotund, from three to four inches in diameter, slightly oblique, cordate at the base where the lobes overlap each other, remotely crenate, rounded at the point, smooth except on the nerves of the under surface, beautifully and finely punctate above. Stipules scariose, acute. Peduncles erect, subdichotomous, nearly as long as the leaves, *i. e.* about six or eight inches in height. Flowers white. Male: Corolla four-petaled, the outer pair large, oblong; the inner small. Stamina numerous. Female: Capsule three-celled, many-seeded, three-winged; wings obtuse-angled, nearly equal.

BEGONIA SUBLOBATA. *W. J.*

Repens, foliis cordatis subquinquelobis vel angulatis dentato-serratis margine reflexis glabris, capsulæ alis æqualibus obtusangulis.

Found under moist rocks on Pulo Pegang, west coast of Sumatra.

Repent, with a thick knotty root. Leaves alternate, petiolate, cordate, sometimes unequally so, large and broad, often six or seven inches long, angulate, sometimes with five acute lobes, sometimes nearly ovate, acuminate, dentato-serrate, edges recurved, very smooth, 5—7-nerved, finely punctate, the dots appearing elevated on the upper surface and depressed on the lower. Petioles 4—6 inches long, nearly smooth, furnished immediately below their junction with the leaf with a semiverticil of linear acute appendices or scales. Stipules large, ovate, rather laciniate towards the apex, one on each side the petiole. Peduncles axillary, erect, 6—8 inches long, red, very smooth, terminated by a dichotomous divaricated panicle of white flowers tinged with red. Bracts roundish. Male: Perianth four-leaved, leaflets rather thick and fleshy, the two outer ones much larger and subrotund, before expansion completely enclosing the inner two, and having their edges mutually applied to each other in such a manner that they form an acute carina round the unexpanded flower. Stamina numerous, in a roundish head; filaments short, inserted on a central column which rises from the base of the flower. Anthers oblong, cells adnate to the sides of the filaments, bursting longitudinally. Female: Capsules with three equal obtusely-angled wings, three-celled, three-valved, valves septiferous in the middle, sutures corresponding to the wings. Seeds numerous, attached to placentæ which project from the inner angle of the cells.

OBS. The serratures are hard and cartilaginous and recurved in such a manner along with the margin of the leaf, that when only observed on the upper surface, their place is perceived by an indentation. It seems to resemble the *B. grandis*, Dryand. which differs, however, in having oblique doubly serrated leaves, and purple flowers.

BEGONIA FASCICULATA. *W. J.*

Foliis inferioribus alternis, superioribus oppositis, oblongo-ovatis basi semicordatis duplicato-serratis pilosis, perianthiis masculis diphyllis, capsulæ alis æqualibus obtusangulis.

Found at Tappanuly on the west coast of Sumatra.

Caulescent. Stem weak, jointed, thickened at the joints, round, covered with red hair. Leaves petiolate, the lower ones alternate, the upper ones opposite, oblong-ovate, inæquilateral, semicordate at the base, acuminate, irregularly serrate, covered above with red erect subspinescent hairs, beneath with softer and weaker hairs. Petioles densely pilose. Stipules linear, acuminate, pilose. The flowers appear in fascicles from the middle of the petioles, and these flower-bearing leaves are always opposed to another without flowers, hence it is that the upper leaves are opposite while the lower are alternate. Fascicles composed of male and female flowers; pedicels slender, smooth, white. Bracts several at the base of the fascicles, acute, pilose, red. Male: Perianth diphyllous, white. Stamina numerous. Anthers yellow. Female: Perianth superior, white, cup-shaped, five-leaved; petals ovate, acute, with a few short red hairs on the outside. Style deeply trifid; lobes convolute, infundibuliform. Capsule three-winged, three-celled, wings equal, obtuse-angled.

BEGONIA PILOSA. *W. J.*

Foliis subsessilibus irregulariter serratis acuminatis pilosis subtus rubris, bracteis ad basin pedicellorum subrotundis ciliatis, capsulæ alis subæqualibus parallelo-rotundatis.

Interior of Bencoolen.

Caulescent, pilose. Leaves alternate, scarcely petiolate, ovate, inæquilateral, acuminate, slightly and irregularly serrate, pilose with long red hairs, under-surface of a bright red colour; about three inches long. Stipules large, lanceolate, pilose externally. Peduncles oppositifolious, subdichotomous. Bracts at the base of the pedicels, roundish, ciliate. Flowers white. Male: Corolla four-petaled, the inner pair smaller. Stamina numerous. Female: Corolla five-petaled; the two outer petals larger. Capsule three-winged; wings nearly equal, parallel and rounded.

BEGONIA BRACTEATA. *W. J.*

Foliis duplicato-serratis acuminatis pilosis, pedunculo 1—3-floro bracteis numerosis appressis vestito, capsulis basi bibracteatis, alis æqualibus rotundatis.

Near the foot of Gunong Bunko in the interior of Bencoolen.

Suberect, strong and branching, very villous, shaggy. Leaves alternate, short-petioled, ovate, semicordate at the base, acuminate, duplicato-serrate, pilose, 3—4 inches long. Stipules large, pilose. Peduncles oppositifolious, generally supported by a smaller leaf, invested, particularly towards the base, with many pairs of opposite ovate acute pilose ciliate bracts, which are pressed flat against each other; the uppermost pair is distant from the rest and supports from one to three pedicels. Flowers white. Male: Corolla four-petaled; the outer two large subrotund. Stamina numerous. Female: Corolla five-petaled; petals nearly equal. Styles three. Stigmata lunate, villous with yellow short glandular hairs. Capsule embraced by two bracts at the base, three-celled, three-winged; wings equal, rounded.

BEGONIA RACEMOSA. *W. J.*

Foliis obovato-oblongis irregulariter dentatis acuminatis glabris, racemis masculis, erectis flore fœmineo axillari, perianthiis masculis diphyllis, capsulæ alis æqualibus parallelo-rotundatis.

Interior of Bencoolen.

Layang Layang Simpai. Malay.

Suberect; stem smooth, jointed. Leaves alternate, short-petioled, obvate-oblong, attenuated towards the base which is unequally cordate, acuminate, irregularly and unequally dentate, smooth; 6—7 inches long. Stipules large, oblong. Racemes oppositifolious, long, erect, bearing numerous fasciculate male flowers, and having a single female one in the axil. Male: Corolla two-petaled, petals very thick. Stamina numerous. Female: Capsule with three, equal, parallel, rounded wings, three-celled.

BEGONIA GENICULATA. *W. J.*

Caule geniculato, foliis ovato-oblongis denticulatis acuminatis glabris, pedunculis divaricato-dichotomis, floribus superioribus masculis dipetalis, inferioribus fœmineis, capsulæ alis æqualibus obtusangulis.

Rumput Udang Udang. Malay.

Sumatra.

Caulescent; stems smooth, compressed, channelled, jointed, thickened at the articulations. Leaves alternate, petiolate, semicordate at the base, ovate-oblong, acuminate, denticulate, smooth. Peduncles oppositifolious, dichotomous, divaricate, many-flowered, lower flowers female, upper male. There is often a female flower from the axil. Male: Perianth two-petaled, white. Stamina numerous; anthers oblong, broader above. Female: Capsules long, three-winged, wings obtuse-angled, equal, smooth.

Obs. The leaves of this plant are used by the natives for cleaning and taking out rust from the blades of their Creeses. It has considerable resemblance to the preceding species.

SONERILA HETEROPHYLLA. *W. J.*

Foliis oppositis altero minimo reniformi altero oblongo acuminato versus basin attenuato ibique semicordato supra glabris, pedunculis axillaribus brevissimis paucifloris.

Found at Tappanuly on the west coast of Sumatra.

Stem creeping, round, covered with appressed scaly hairs. Leaves opposite, almost sessile, one very minute and reniform, the other about three inches long, oblong, broader above, acuminate, narrowing to the base, semicordate, the outer lobe forming a rounded auricle, obsoletely denticulate or nearly entire, a small spinule on the denticulations; three-nerved, smooth above, whitish beneath, with some hairs on the nerves. Petioles scarce any. Flowers from the axils of the small leaves, sometimes nearly solitary, sometimes four or five on a very short peduncle. Pedicels reddish, seated on small tubercles, furnished with glandular hairs. Calyx superior, trifid. Corolla three-petaled. Stamina three. Capsule turbinate, three-celled, many-seeded.

OBS. This species is remarkable for the extreme difference in the size of the opposite leaves, one of which is so minute as almost to escape observation. The same peculiarity exists in the *Sonerila Molluccana.*

RHODODENDRON MALAYANUM. *W. J.*

Foliis oblongis glabris punctatis, floribus terminalibus, pedicellis cernuis, corollâ punctatâ basi gibbâ.

Observed on the summit of the Sugar-loaf mountain in the interior of Bencoolen.

This is a large shrub or small tree, much branched. Bark brown and spotted. Leaves alternate or scattered, short-petioled, lanceolate-linear, 2½—3 inches long, attenuated to both ends, somewhat bluntish at the point, entire, smooth, thickly sprinkled beneath with brown dots, and green above with depressed points; the middle nerve is strong, the lateral ones scarce any. Stipules none. Flowers from a short terminal bud, which is at first closely invested by numerous imbricated broad bracts, which successively fall off and at length leave the short thick peduncle annulated by their cicatrices. It throws out near the point several nodding one-flowered pedicels which are dotted in the same manner as the leaves. Calyx very small, five-toothed. Corolla crimson, tubular, expanding into a five-lobed limb, sprinkled with callous dots; tube gibbous at the base and marked with five furrows. Stamina ten, leaning to one side, inserted on the very base of the corolla and about as long as its limb; filaments red; anthers yellow, opening at top by two oblique pores. Style a little shorter than the stamina. Stigma a round head marked with five indistinct rays. Ovary superior, oblong, five-sided, covered with brown spots, five-celled, polysporous.

Obs. I found this and the following species of *Vaccinium* on the very summit of Gunong Bunko, a remarkably insulated mountain in the interior of Bencoolen, commonly called by Europeans the Sugar-loaf, in reference to its shape. Its elevation is not estimated to exceed three thousand feet, yet the character of its vegetation is decidedly alpine. This character is probably more marked than it would be at a similar height on the side of a differently-shaped hill, owing to the steepness which refuses space for large trees, and the consequent exposure and want of shelter on its sharp conical peak.

VACCINIUM SUMATRANUM. *W. J.*

Racemis axillaribus foliis brevioribus, foliis elliptico-ovatis integerrimis coriaceis.

Found on the summit of Gunong Bunko or the Sugar-loaf mountain in the interior of Bencoolen.

A small tree, with reddish-brown bark and smooth branches. Leaves alternate, short-petioled, elliptic-ovate, acuminate, sometimes obtuse, entire, edges a little reflexed, very smooth, firm, stiff and leathery, pale green beneath; about four inches long. Stipules none. Racemes axillary, shorter than the leaves, often from the stem below them; flowers white, pedicellate, alternate. Calyx small, cup-shaped, slightly four-toothed. Corolla oblong-ovate, contracted at the mouth; limb short, recurved, four-parted. Stamina eight, incluse, inserted on the base of the corol; filaments dilated at the base, pilose, tinged with red; anthers two-lobed, between which are two short filaments or processes, each lobe prolonged upwards into a membranaceous horn or awn, which is bifid at top and opens by a pore. Ovary semi-inferior, four-celled, polysporous; ovula attached to the inner angles of the cells. Style columnar, a little longer than the stamina, incluse. Stigma round, obtuse.

HALORAGIS DISTICHA. *W. J.*

Foliis alternis distichis obliquis integris, floribus axillaribus subsolitariis, petalis tridentatis.

Kayo Kanchil. Malay.

This species is not unfrequent in Sumatra, at Singapore and other parts of the Malay Archipelago.

A shrub, with ferruginous pilose branches. Leaves alternate, distichous, arranged in two series, one of large leaves and another of very small ones which resemble stipulæ being regularly placed a little below the insertion of the large ones so as to lie over their bases; the large leaves are subsessile, rhomboid-oblong, inæquilateral, acute, entire, nearly smooth above, pilose with short appressed hairs beneath, from an inch to an inch and a half long; the small leaves are similar in shape but more acute and little more than a quarter of an inch long, they are arranged on the anterior side of the branch and are closely appressed to it so as to resemble stipules. Flowers axillary, generally solitary, subsessile. Calyx four-leaved, persistent. Petals four, shorter than the calyx, trifid. Stamina eight, as long as the petals; anthers two-celled. Ovary inferior, four-sided, ferruginous, four-celled, tetrasporous. Styles four, equal to the stamina. Stigmas simple. Drupe oblong-ovate, red, containing a nut with eight longitudinal furrows, and containing a single seed. Seed oblong-oval; embryo central in an ample albumen.

Obs. The general habit of this species is very peculiar, and has much the character of Australasian vegetation, to which country the genus principally belongs.

ELODEA. *Adanson.*

This Genus, which has been revived by a late author on American Botany, appears to be abundantly distinguished from *Hypericum*, and to form a good natural division. It is principally characterized by having the stamina united into three phalanges, which alternate with an equal number of nectaries. In the following species the placentation is peculiar; I know not whether the American plants exhibit the same structure, as it is not mentioned in any description which I have seen, but if it should prove on examination that they do, it ought to form part of the generic character. Loureiro's *Hypericum Cochinchinense*, which undoubtedly belongs to *Elodea*, appears to be very nearly related to my *E. Sumatrana*, and his description of the seeds seems to indicate a structure similar to what I have observed. The *Hypericum petiolatum* of the same author seems also referable to this genus, and to be different from Linnæus' *H. petiolatum* which is a native of Brazil. In all the species now referred to *Elodea* the generic distinction appears to receive confirmation from certain differences of habit which may be remarked between them and the true *Hyperica*, particularly in the colour of the flower, which in the latter is almost without exception yellow, but in *Elodea* is often red.

"The *Elodea* of Jack is not the same as the North American genus of that name, but corresponds with the section of *Hypericum* called *Tridesmos*, which has been (although Jack's paper was then unknown to them) suggested by Messrs. Hooker and Arnott (*Bot. of Beech. Voy. p.* 172), as the type of a genus to be named *Tridesmos*. *G. A. W. A.*"

ELODEA SUMATRANA. *W. J.*

Foliis subsessilibus oblongis attenuato-acuminatis glabris rigidiusculis, paniculis terminalibus foliosis, staminibus numerosis triadelphis, petalis basi nudis.

Found at Tello Dalam in the island of Pulo Nias.

A large shrub or small tree. Branchlets rather compressed, obscurely four-sided. Leaves opposite, almost sessile, oblong, tapering to the point, acute, broad at the base, entire, smooth; nerves proceeding from a middle rib, strong, six or seven inches in length; the surface appears by the aid of the microscope to be dotted with opaque points. Panicles terminal, foliose, the lower divisions being axillary; oppositely branched and rigid. Flowers dark red or purple. Bracts minute. Calyx five-leaved, persistent, leaflets ovate, smooth, the outer ones smaller. Corolla cup-shaped, longer than the calyx, five-petaled; petals subrotund; unguis naked, without pore or scale. Nectaries three, yellow, inserted below the corolla, and half as large as the petals, subrotund, doubled backwards upon themselves in such a manner as to form a sack which opens behind near the base. Stamina numerous, their filaments united for about half their length into three phalanges, which are inserted alternately with the three nectaries; they are a little shorter than the corolla; anthers yellow, two-celled. Ovary oblong, three-celled, many-seeded. Styles three, diverging. Stigmata three, subrotund. Capsule oblong, three-celled, each cell containing several seeds as long as the cell and attached to the bottom of the central column; they are thin and flat, disposed regularly one within the other forming concentric circles, which are particularly apparent in the transverse section of the capsule.

Obs. This curious arrangement of the seeds is not a little remarkable; they lie one within the other like skins of an onion, each occupying the full length and breadth of the cell, but diminishing regularly in size from the outermost to the middle in proportion to the different radius of the circle which is described round the common centre. They are attached one above the other to the bottom of the cell at its inner angle. The leaves are destitute of pellucid dots, and have their lateral nerves strongly and distinctly marked. The nectaries which alternate with the stamina are very peculiar, being saccate, apparently by being doubled backwards. This species differs from the following and those of America in having no scales at the base of the petals, and from the latter in having numerous stamina. It appears to be nearly related to Loureiro's *Hypericum Cochinchinense*, which, as already observed, belongs to this genus.

ELODEA FORMOSA. *W. J.*

Foliis petiolatis lanceolatis subtus glaucis, pedunculis fasciculatis axillaribus staminibus, numerosis triadelphis, nectariis acutis.

Kayo Gaghak. Lampong. Sepadas Bunga. Malay.

Native of Sumatra.

A small tree with cinereous bark and smooth branchlets. Leaves opposite, elliptic-oblong, acute, very entire, smooth, glaucous beneath, pellucidly punctate; two and a half inches long; the nerves proceed from a midrib. Petioles slender. Peduncles axillary and from the axis of fallen leaves, fasciculate, one-flowered, slender, smooth. Flowers white with a slight rosy tinge. Bracts several at the base of the peduncles. Calyx five-leaved, smooth; leaflets acute. Corolla five-petaled, longer than the calyx; petals oblong, each furnished with a broad adnate scale a little above the base. Stamina numerous, united into three phalanges. Nectaries three, alternating with the stamineous fascicles, red, acute, carinate behind, fleshy. Ovary three-celled, each cell containing several flat ovula lying one within the other, and attached by their bases to the lower part of the axis. Styles three, long. Stigmas capitate. Capsules oblong, crowned by the persistent styles, three-celled, many-seeded. Seeds thin, flat, attached by their bases to a central triangular column, on which they are inserted alternately in a double series.

Obs. The arrangement of the ovula is similar to that observed in the *E. Sumatrana;* they are thin, attached by their bases to the lower part of the cell, suberect, and concentrically disposed, but are inserted rather higher on the axis of the cell than in the former. This species agrees with those of America in having a scale at the base of the petals, but differs in having numerous stamina; it therefore comes nearer to the *E. Egyptiaca* (*Hypericum Egyptiacum,* Linn.)

TERNSTRŒMIA.

("The first species here described by Jack belongs undoubtedly to *Sauraja*. The two others appear to do so likewise, but Jack has not mentioned the bracteas under the calyx which always occur in that genus.) *G. A. W. A.*"

The Malayan species of *Ternstræmia* exhibit a remarkable agreement among themselves, at the same time that they differ considerably from the rest of the Genus. They have a trilocular ovarium surmounted by three styles which are inserted on the same point, but are separate to the base. In some the corolla is monopetalous with monadelphous stamina, in others it is five-petaled with distinct stamina. The anthers are two-celled and open at the top by two oblique pores; this is probably the case with the whole genus, though it has been omitted in the generic character, of which it ought certainly to form an essential part. It seems doubtful whether the monogynous species with bilocular fruit and definite seeds ought to be united with those which have three styles, three cells and numerous seeds, but an examination of their ovaries and placentation is necessary to decide the question. I have met with four species in Sumatra and the adjacent islands, two of which I have already described in the first volume of the Malayan Miscellanies. Their common appellation in Malay is *Ingor ingor Karbau*, or "Buffaloes' spittle."

TERNSTRŒMIA ACUMINATA. *W. J.*

Foliis obovatis lanceolatis acuminatis spinuloso-denticulatis glabris, floribus axillaribus solitariis polyandris, pedunculis squamosis, fructu triloculari.

Found at Tappanuly on the West coast of Sumatra.

Branches round, somewhat flexuose. All the young parts green with a few appressed scales. Leaves alternate, petiolate, obovate-lanceolate, attenuated to the base, terminating in a long acumen or point, spinuloso-denticulate, smooth with the exception of a few appressed scales on the lower surface; about a foot in length. Petioles short, scaly. Peduncles axillary, solitary, one-flowered, scarcely so long as the petioles, covered with small scales. Calyx five-leaved, the three outer leaflets with appressed scalets. Corolla white, five-petaled, little longer than the calyx. Stamina many, inserted on the base of the petals; anthers large, truncate and opening by two pores at the top. Ovary three-celled, many-seeded. Styles three.

Obs. This agrees with the *T. pentapetala*, in having the corolla divided to the base, but the leaves are more acuminate and the flowers are solitary and axillary.

TERNSTRŒMIA SERRATA. *W. J.*

Foliis obovato-oblongis cartilagineo-serratis glabris, pedunculis axillaribus binis, floribus monadelphis, laciniis corollæ emarginatis, fructu triloculari.

Frequent on the island of Pulo Nias.

A small tree; young parts furnished with brownish scales. Leaves alternate, petiolate, obovato-oblong, acuminate, serrate with irregular cartilaginous uncinate serratures, smooth, pretty strongly nerved; 7—8 inches long. Petioles brown, scaly. Peduncles generally two, axillary, one-flowered, slender, about an inch long. Calyx five-parted, whitish; leaflets unequal. Corolla white, monopetalous, quinquefid, longer than the calyx, cup-shaped, lobes bifid or emarginate, generally oblique. Stamina shorter than the corolla, and inserted on its base; filaments united below; anthers oblong, bifid, two-celled, each cell opening at top by an oblique cucullate pore. Ovary hairy, three-celled, many-seeded; placentæ central. Styles three, longer than the corolla, irregularly bent. Berry three-celled, many-seeded. Seeds angled, foveolate.

Obs. This differs from the other Sumatran species in having firmer leaves, with stronger nerves and thickened callous serratures. The peduncles are more slender, the styles longer, and the lobes of the corolla obliquely notched.

TERNSTRŒMIA CUSPIDATA. *W. J.*

Foliis obovato-ellipticis acuminatis dentato-serratis serraturis apice hamatis, fructibus 5-locularibus, pedunculis axillaribus 1—3-floris.

A tree, young parts ferruginous. Leaves petiolate elliptic-ovate, attenuated to the base, broader above, sharply acuminate, serrated, the narrow sharp toothlets generally curved or hooked at their points, smooth, often marked with white glandular spots on the nerves, veins, and serratures; 6—8 inches long. Peduncles axillary, 1—3-flowered, smooth. Calyx 5-parted, segments orbicular. Corolla white, monopetalous, 5-parted. Stamina numerous; anthers opening by two gaping pores. Ovary subglobose, 5-celled; ovula very numerous; placentæ from the inner angle of the cells. Style very deeply 5-parted.

Obs. This species (received from Satumah during the printing of the present sheet,) comes very near the *T. serrata;* it differs in having the leaves more sharply acuminate, with longer tooth-like serratures, and rather shorter petioles; the peduncles frequently bearing two or three flowers and not so slender as in the former; and in the 5-celled fruit.

MILLINGTONIA. *Roxb.*

Calyx 5-phyllus, foliolis duobus exterioribus minoribus. *Corolla* 5-petala, petalis duobus minoribus squamiformibus. *Stamina* quinque, quoram tria sterilia difformia basi petalorum majorum inserta; duo fertilia basi minorum adnata, filamentis apice scyphun gerentibus cui antheræ bilobæ insident. *Ovarium* nectario annulari cinctum, bilocare, loculis disporis. *Drupa* nuce plerumque monospermâ *Embryo* erectus, curvatus, albumine nullo aut parco.

Obs. It will be perceived that I have made a considerable and material alteration in the terms of the generic description from that given by Roxburgh, *Fl. Ind.* i. *p.* 102, which I conceive to be necessary towards explaining the true relations of the various parts of the flower, and thereby affording the means of tracing more correctly its natural affinities. The principal point is to determine the real nature of what Roxburgh calls the nectarial scales at the base of his petals. have no hesitation in considering them as abortive stamina, which the examination of the flower before expansion, places, I think, beyond a doubt. In that state the whole of the stamina connive over the pistil, the anther of the fertile ones is turned inwards, so as not to be visible and there is no considerable difference of appearance between them and the sterile ones. The anther-bearing hollow of the fertile stamina is applied to a corresponding hollow on the side of the sterile ones, and at the time of expansion the former separate themselves with a jerk and become erect, while the latter continue in their original position incumbent over the pistil. The petals on which the fertile stamina are inserted are much smaller and narrower than the others, as if exhausted by the greater development of the parts they nourish. These petals are called by Roxburgh outer laminæ of the filaments, which is contrary to all common analogy, while the other explanation might by (be) supported by numerous examples of a similar structure. Thus in place of a diandrous flower with tripetalous appendiculate corolla and bifid stamina, we obtain five as the primary number of all the parts, only modified by the partial abortion of three of the stamina.

MILLINGTONIA SUMATRANA. *W. J.*

Foliis impari-pinnatis, foliolis 3—6-jugis ovato-lanceolatis, petalis minoribus acutis, fructu ovato.

Found on the island of Pulo Nias.

It is a moderate sized tree with grey bark. Leaves alternate, pinnate with an odd one which is rarely wanting; leaflets from 5—13, opposite, ovate-lanceolate, acuminate, entire, smooth, 6—9 inches long. Common petiole flat above and marginate, thickened at the base. Panicles terminal, many-flowered, rather coarctate, with stiff rigid divisions, slightly tomentose. Flowers white. Bracts minute. Calyx small, five-leaved, the outer two smaller, resembling bracts. Corolla five-petaled, the outer three large, subrotund, the inner two much smaller, lanceolate, acute. Stamina five, inserted on the bases of the petals; two fertile, upon the smaller petals, with broad filaments expanding at top into a kind of cup, on which the anther rests, and to whose outer edge it is attached; the anther consists of two yellow lobes resembling masses of pollen which burst transversely. The three sterile stamina which are inserted on the larger petals have thick filaments without anthers, but marked with an oblong cup-like cavity on each side corresponding to the cups of the fertile ones. Before expansion, the 5 stamina connive over the pistil in such a manner that the cup-like cavities are mutually applied to each other; on expansion the fertile stamina separate with a jerk, by which the pollen is in part dispersed, and the cup becomes erect with the anther resting upon it; the other three never separate, but remain conniving over the pistil. Ovary embraced at the base by a nectarial cup with 5 toothlets, ovate, 2-celled, each cell containing two ovula attached to the centre of the partition. Style short. Stigma small. Berry ovate, oblique or recurved, somewhat less than an olive, containing a single one-seeded nut. Nut obovate-oblong, acute and curved at the base, carinate along one side and having a large umbilical hollow above the base on the other, smooth, one-seeded. Seed obovate-oblong, acute at the base, covered with a dry loose, brown skin: albumen none; embryo glutinous on the surface, erect, doubled on itself; cotyledons thin, foliaceous, large, round-ovate, reflected backwards upon the

Journals, with descriptions made on the spot, of 2300 species of plants—others on Zoology, (partly printed in FRORIEP) others containing remarks and researches of a more general kind—200 sheets of drawings, among which are all the Chilian *Orchideæ*, and the most splendid Peruvian forms; also the materials for a Monograph of the Tropical American *Aroideæ*, (these of colossal dimensions,) have safely reached Europe and surround me at the present moment. The Travels are printing—the first number of my Nova Species Plantarum, edited in company with Endlicher of Vienna, will also soon be out, and I send a fragment of it along with the plants. Thus you see how much a man may work, provided he has nothing else to do but to work. Though surrounded with far 'greater facilities, I do not accomplish half so much here as I used to do in the heart of the primæval forests of the Amazones, whither, however, I should not like to return after all, now that I have learned rightly to appreciate the vaunted beauty of tropical climates, on which many a sweet youth has penned the well-turned period, without having ever quitted the precincts of his paternal roof; and of which one is condemned to hear so much nonsensical talk as goes nigh to turn the stomach even of so 'old a voyager' as myself. You see I am not likely to be one of those who 'bepraise,' after the common accepted fashion, the warm countries, partly because, like all other northern animals, the writers feel a secret impulse towards the south, and partly because they may calculate how much cheaper it is to live in a country where no fuel is required, whether wood or coal. *À propos*, is not this a matter worthy the consideration of the literati of our frosty Germany, who are generally not blessed with much store of worldly goods? The finest country I ever saw, and where really all seems to be united which a being of moderate wishes might desire to possess, is no doubt the republic of Chili; but certainly not Chili of Valparaiso. Our friend Mr. —— used to be very bitter and unjust against that country, and we often quarrelled about it, but he will have learned better after living in that Tartarus, the lower part of Peru. I am confident that the descriptions of some alpine scenes, lat. 38°; of some wild but very interesting nations; and of the wonderful character of the eastern slope of the Andes, of Peru (lat. 9°, S.); as given in my Travels, will afford you pleasure. Rely upon it, I shall easily steer clear of some shoals and rocks on which others have either suffered damage or wreck:—our public wants something sterling and is rendered fastidious by the works of Humboldt, Martius, and Neuwied."

In addition to the above information, we learn from Poeppig's Prospectus of his *Travels in Chile, and the Amazones River, during the years* 1827—32, "that the freedom of the Spanish colonies in South America now permits the stranger to undertake their scientific examination, and abundant and interesting is the matter they afford. Since the period when, favoured by the Court of Madrid, Humboldt, the greatest traveller of the day, penetrated the interior of the colonies, no other authentic account of these countries has appeared. The dissensions which the Spaniards have continually excited, have increased the number of travellers, and the curiosity of the reading world has occasioned the publication of many works, penned by authors who had sailed to South America with totally different views from those of science. Peru and Chile were the last to be liberated. The prolonged disturbances in these provinces, and their great distance from Europe, explain why so few works, and at so recent a date, have appeared respecting them, and these too describing solely the most frequented districts. The Author of the work now announced is one of the few foreigners, and the only German, who visited these republics with a purely scientific object during late years. Prepared by several years' residence in the West Indies and North America, he entered Chile in 1827, and was there, as well as subsequently in Peru, permitted, on account of his peculiar objects, to examine districts hitherto untrodden by any scientific European. During his absence, the learned public were from time to time informed of his progress and

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END OF VOLUME FIRST.

GLASGOW:
EDWARD KHULL, PRINTER TO THE UNIVERSITY.

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